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SAILING DIRECTIONS

FOR THE

GULF AND RIVER

OF

S T. L A W R E N C E;

BY

HENRY WOLSEY BAYFIELD,

CAPTAIN ROYAL NAVY, F.R.A.S.



BEING THE RESULT OF A SURVEY MADE BY ORDER OF THE
LORDS COMMISSIONERS OF THE ADMIRALTY.

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POSITIONS

IN THE
GULF AND RIVER OF ST. LAWRENCE.

BY CAPTAIN H. W. BAYFIELD, R.N.

Corrected to 31st of October, 1839.

Place.	Point where observed.	Latitude, North.	Longitude, West.	High Water at Full and Change.
St. Paul Island . .	North extreme	° ' "	° ' "	h. m.
Ditto	East side of Neck	47 14 0	60 11 17	..
		47 13 14	60 11 28	..
MAGDALEN ISLANDS.				
North Bird Rock . .	Centre	47 51 2	61 12 11	..
Bryon Island . . .	East point	47 47 58	61 27 33	..
East Point	70 fathoms N.W. of eastern ex- treme	47 37 38	61 26 3	..
Amherst Harbour . .	North side of entrance	47 14 28	61 52 21	8 20
Deadman Rock . . .	West point	47 16 8	62 15 20	..
NEWFOUNDLAND—WESTERN COAST.				
Cape Ray	S.W. extreme	47 36 56	59 20 10	..
Cod-Roy Island . . .	South side of Boat Harbour	47 52 38	59 26 45	..
Red Island	30 fathoms N.E. of south point	48 33 58	59 16 16	..
Port Saunders . . .	N.E. point entrance	50 38 36	57 20 57	10 0
Rich Point	Western extreme of high-water mark	50 41 47	57 27 14	..
Ferroll Point	Cove point, N.E. extreme	51 2 22	57 5 38	..
Green Island	150 fathoms from N.E. end	51 24 18	56 35 46	..
Norman Cape	North side of Point Cove, south of east extreme	51 38 5	55 56 21	..
LABRADOR COAST.				
Belle Isle	N.E. point (magnetic)	52 1 16	55 19 4	..
St. Lewis Cape . . .	Small peninsula on S.E. point	52 21 24	55 41 23	..
Battle Islands . . .	N.E. extreme of S.E. island	52 15 44	55 35 19	..
Henley Island	Middle of north side	52 0 8	55 53 30	7 35
York Point	East extreme	51 58 1	55 55 51	..
Red Bay	Harbour Island, S.E. point	51 43 55	56 28 24	7 45
Loup Bay	Flag-staff at head of bay	51 31 35	56 51 50	..
Forteau Point	S.W. extreme of point	51 25 37	56 59 25	..
Bradore Hills	N.W. hill, 1,264 feet high; the Notre Dame of Cook and Lane	51 35 11	57 14 50	..
Ditto	South hill, 1,135 feet	51 34 2	57 14 32	..
Ditto	Middle, or N.E. hill	51 34 57	57 13 50	..
Greenly Island	N.E. point	51 23 19	57 13 34	..
Bradore Harbour . . .	Flag-staff at Jones's house	51 27 38	57 17 6	8 45
Belles Amours Point .	S.E. extreme	51 26 42	57 28 44	9 0
Lion Island	Isthmus	51 24 9	57 41 21	9 15
Mistanoque Island . .	East point of cove in north side of island	51 15 51	58 15 7	10 30
Dead Cove	South point	50 46 52	59 2 5	..
Grand Mecattina Point	S.E. extreme	50 44 10	59 2 55	..
Hare Harbour	East side—See chart	50 36 32	59 20 7	..
Antrobus Point	North point of island	50 33 20	59 19 31	..

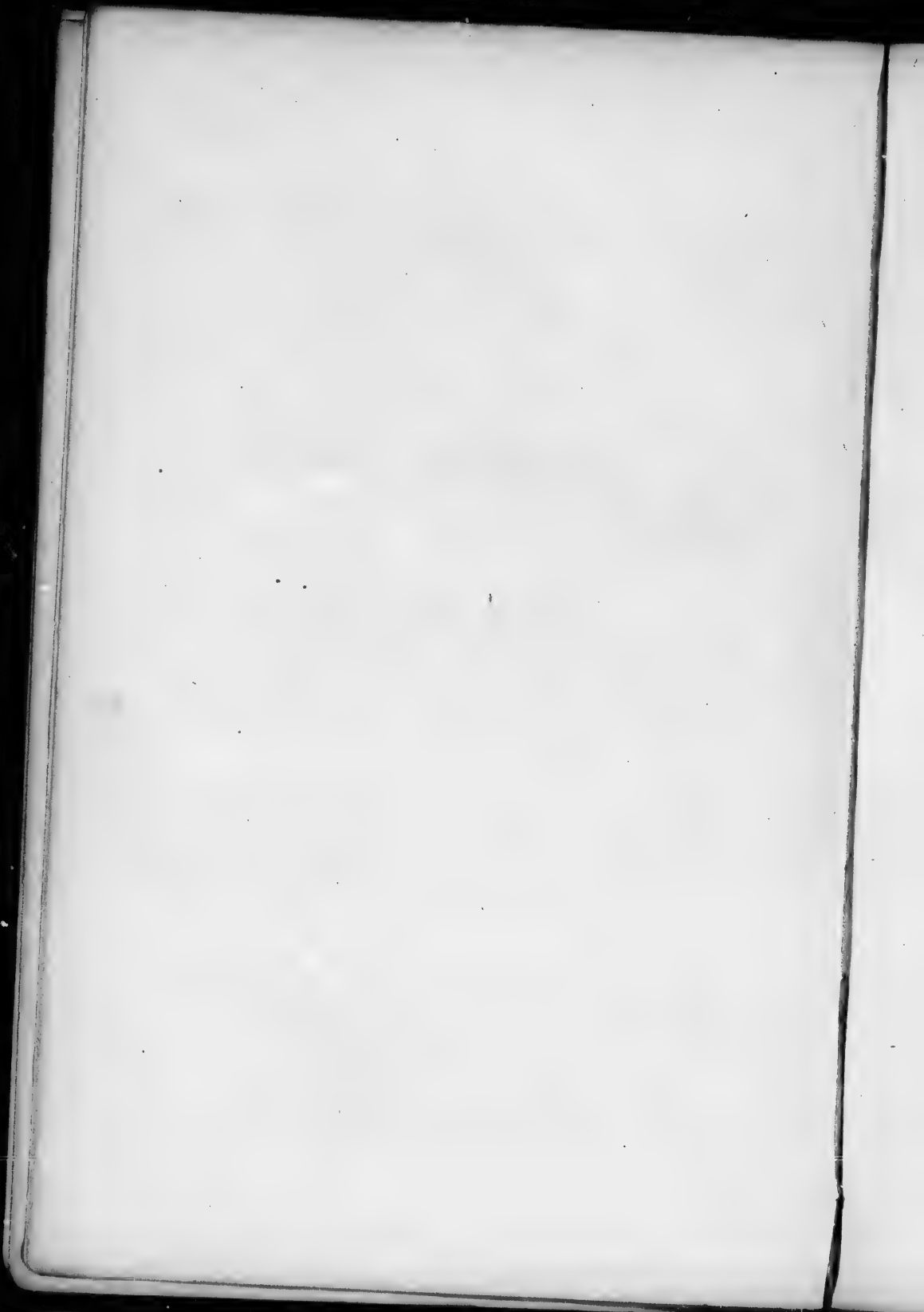
POSITIONS.

Place.	Point where observed.	Latitude, North.	Longitude, West.	High Water at Full and Change.
LABRADOR COAST—continued.				
Wapitagan Harbour	Eastern point of islet on southern side of anchorage	50 11 48	60 4 5	h. m. 10 30
Whittle Cape	S.W. extreme of Lake Island	50 10 44	60 9 46	..
Coacocho Bay	South point of outer islet	50 9 12	60 20 55	..
Kegashka Bay	Islet at south end of the beach	50 11 27	61 18 21	10 45
Natashquan River	Southern point of entrance	50 7 5	61 50 43	..
Little Natashquan Harbour	North point of islet at the head of the bay	50 11 49	61 53 17	..
Nabesippi River	First granite point S.E. of entrance	50 14 0	62 15 49	..
Watchashoo Peninsula	Summit	50 16 26	62 44 3	..
Appeletat Bay	East point	50 16 43	63 1 7	..
Befchewun Harbour	S.E. point of Low Isle	50 14 21	63 13 30	11 12
Clearwater Point	S.W. extreme	50 12 35	63 30 4	..
Mingan Harbour	Sandy point	50 17 32	64 4 56	1 7
Mingan Island	Summit	50 12 56	64 10 31	..
St. John River	East point of entrance	50 17 11	64 23 16	..
Manitou Point	Extreme	50 17 42	65 17 9	..
St. Charles Point	South extreme at high water	50 15 25	65 51 50	..
Moisie River	S.W. point of entrance	50 11 24	66 7 41	..
Carousal Island	South extreme	50 5 29	66 26 35	..
Seven Islands Bay	Storehouse, east side	50 13 7	66 27 7	1 20
St. Margaret Point	Extremity	50 2 33	66 47 45	..
Cawee Islands	West point of Little Island	49 49 29	67 4 57	1 50
Egg Islands	West point of North Island	49 38 21	67 13 10	..
Trinity Bay	S.W. point	49 23 47	67 21 12	1 55
Point de Monts	Lighthouse	49 19 43	67 25 2	..
Point de Monts	South extreme	49 18 49	67 26 22	..
ANTICOSTI ISLAND.				
West Point	S.W. extreme of the headland at high water	49 52 20	64 35 8	..
Cape Henry	S.E. extreme	49 47 50	64 25 44	1 43
South West Point	High-water mark near the light-house	49 23 53	63 38 47	..
South Point	At high-water mark	49 3 43	62 18 30	..
East Point	Ditto	49 8 25	61 42 59	..
Bear Bay	Entrance of river	49 30 30	62 27 29	..
Observation Bay	West side of near rivulet	49 38 59	62 44 24	..
North Point	Ditto, high-water mark	49 57 40	64 12 0	..
NORTH SHORE OF THE ST. LAWRENCE RIVER.				
Goodbout River	Trading post	49 18 33	67 39 9	1 52
St. Nicolas Harbour	Cross point	49 18 14	67 49 42	1 55
St. Nicolas Point	South extreme	49 15 55	67 53 10	..
St. Giles Point	Extreme	49 12 34	68 12 3	..
Manicouagon Point	S.E. extreme	49 6 13	68 15 1	2 0
Bersimis Point	South extreme	48 54 5	68 41 35	2 0
Jeremy	Trading post	48 52 53	68 49 52	..
Fort Neuf	Church	48 37 25	69 9 0	2 10
Tadoussac (Saguenay River)	Store on beach	48 8 40	69 46 1	2 45
Chicoutimi (Saguenay River)	Trading post	48 26 13	71 8 2	4 11
Coudres Island	West point of Prairie Bay	47 24 48	70 28 2	4 25
Quebec	North Bastion	46 49 8	71 16 0	6 38

POSITIONS.

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Place.	Point where observed.	Latitude, North.	Longitude, West.	High Water at Full and Change.
SOUTH SHORE OF THE ST. LAWRENCE.				
Cape Despair . . .	Extreme . . .	48 25 30	64 21 32	h. m.
Gaspé Basin . . .	Sandy Point, N.W. side of Nar- row Entrance . . .	48 49 53	64 31 41	..
Cape Gaspé . . .	Flower-pot Rock . . .	48 45 10	64 12 22	2 30
Cape Rozier . . .	Extremity, seen from Cape Gaspé	48 51 45	64 14 48	..
Great Fox Bay . . .	Centre of . . .	49 0 5	64 25 52	1 0
Mont Louis River . . .	East point of entrance . . .	49 14 37	65 46 35	1 30
Cape Chatte . . .	Extreme . . .	49 6 0	66 48 19	..
Matau River . . .	Inner S.W. point of entrance . . .	48 51 43	67 34 29	2 0
Metis . . .	Reef off Little Metis . . .	48 41 18	68 4 39	2 10
Camille Mount . . .	Summit, 2,036 feet above high water spring tides . . .	48 28 44	68 15 55	..
Barnaby Island . . .	N.E. point . . .	48 29 43	68 35 2	..
Bic Island . . .	N.E. extreme of S.E. reef . . .	48 25 17	68 51 30	2 15
Razade Rocks . . .	N.E. rock . . .	48 12 35	69 11 9	..
Green Island . . .	Lighthouse . . .	48 3 25	69 28 14	2 45
Loup River . . .	N. point of entrance . . .	47 51 5	69 36 49	..
Brandy Pots . . .	South point of South Rock . . .	47 52 36	69 43 47	3 0
Kamourasca . . .	N.E. point of Crow Island . . .	47 35 17	69 55 48	4 0
Crane Island . . .	Station on beach, $\frac{1}{4}$ mile S.W. of Macpherson . . .	47 4 30	70 34 22	5 20
Dauphine River (Or- leans Isle). . .	S.W. point of entrance . . .	46 58 12	70 53 54	5 40



SAILING DIRECTIONS
FOR THE
GULF AND RIVER ST. LAWRENCE.

PART I.

THE BEARINGS ARE MAGNETIC—THE MILES ARE
60 TO A DEGREE—AND THE CABLES ARE 100
FATHOMS.

CHAPTER I.

GENERAL REMARKS.

1. Former Charts of the St. Lawrence.—2. Massey's Sounding Machine.—
3. Variation.—4. Deviation.—5. Magnetic Action of the Shore.—
6. Ice.—7. Fogs.—8. Winds and Weather.—9. The Marine Barometer.

1. THE navigation of the Gulf and River of St. Lawrence has *Former Charts.*
always been supposed to be attended with a considerable degree
of difficulty and danger, and the numerous accidents which are
constantly occurring to vessels there seem to show that the
opinion is well founded. The want of soundings, in many parts,
near the shores; the irregularity of the tides and currents; the
severity of the climate, especially towards the close of the navi-
gable season; and, above all, the frequent fogs, are difficulties
which may well cause much anxiety in the mind of the seaman,
and which call for the exercise of all his vigilance, prudence, and
ability. Nevertheless, a very large proportion of the losses which
annually take place, may, I think, be attributed to other than
these natural and irremediable causes. Erroneous charts, a want
of knowledge of the direction and strength of the tides and cur-
rents, and a false variation of the compass, are although not the
only, certainly the most frequent causes of shipwreck in the
St. Lawrence. It is hoped that these last will be removed by the
survey, which has been made by order of the Lords Commis-
sioners of the Admiralty, and by these directions and remarks,
9 written also by their command, in order to accompany that survey.

Des Barres' Charts.

Of the various charts of the St. Lawrence which have hitherto been in use, those of Major Holland, re-published by Des Barres in 1778, are the least inaccurate, yet the least in general use. The others appear to be taken from them, with alterations, which seem to rest on no better foundation than the fancy of the chart-makers, who, in their compilations from materials generally inaccurate, appear to have considered the latest as necessarily the best information. The effect of this has been the retention of old errors and the addition of new ones, for it so happens that the most recent charts of the St. Lawrence at present in use, are the most erroneous of any. In Des Barres' charts, although thus mentioned as the best, the errors and omissions are numerous and important. The soundings are generally incorrect, frequently so much so as to be directly contrary to the truth; for he occasionally shows a moderate depth of water, where there should be 100 fathoms or more, and in other places a great depth where there is bottom to be found with the hand lead. Commanders of ships having found that they could not trust to the soundings in these, and the other charts, have considered it of no use to sound, from which many fatal accidents have occurred within my own knowledge.

Massey's Sounding Machine.

2. In the Admiralty charts will be found accurate soundings, taken with Massey's patent sounding machine, which gives the exact perpendicular depth independent of the effect of currents or drift of the vessel. I strongly recommend the use of this excellent instrument, with which every vessel, in my opinion, ought to be furnished. It is not expensive, and will last with care for a long period of time: correct soundings may be obtained with it in 30 fathoms of water without heaving to, if the vessel be not sailing at a rate exceeding 7 knots; and no vessel ought to be permitted to run faster, in a thick fog, or dark night, when in the vicinity of land, or other danger. Furnished with this instrument, or, instead of it, with Burt's buoy and nipper, and with correct charts, a vessel may be run in safety up the St. Lawrence as high as Green Island. In short, there as elsewhere, correct soundings are the best of all guides to the navigator.*

* There is no difficulty in the use of Massey's patent sounding machine, and it is sold accompanied with directions for setting, reading its indications, &c. The common deep sea lead line is not strong enough to bear the strain of the lead and attached machine. When the vessel is going fast through

GENERAL REMARKS.

3

3. The variation, given in Des Barres' charts, was probably correct for the time when the charts were made; and though greatly changed since, has been copied nevertheless into most of the charts in general use. For instance, in some of those charts the variation at Anticosti is given as 17° west, too little by three-quarters of a point. The effect of this upon the run of a vessel from the entrance of the Gulf to Anticosti, or from the latter to Point de Monts, will be obvious to any seaman, and has doubtless occasionally been one cause of shipwreck.

Erroneous Variation.

4. There is another source of error, independent of charts altogether, which it is astonishing to find obtaining so little attention, particularly in the merchant service, considering how much has been written concerning it of late years. I allude to the deviation, or local attraction of the needle. This subject may be seen fully treated in Mr. Barlow's treatise on magnetic attraction; and Scoresby in his works on the arctic regions, and on the Greenland whale fishery, gives many valuable and practical directions respecting the methods available under different circumstances, for finding its amount in various positions of the ship's head, and applying a correction accordingly to the course steered. The amount of error from this cause will be a point of the compass in most vessels, and, in particular circumstances, may become twice that quantity in those latitudes.

Deviation, or Local Attraction.

5. An opinion is prevalent that the compasses of vessels are disturbed in the Gulf and River St. Lawrence, and such disturbance has been attributed to the magnetic ores of iron in the hills, particularly those of the north coast. The magnetic oxide of iron does exist abundantly, and attracts the needle very powerfully at some points, particularly along the coast from the Bay of Seven Islands eastward. Among the Mingan Islands, we found

Magnetic action of the shore.

the water, a superior line should be employed for the purpose. When sailing at a rate not exceeding 5 knots, bottom may be struck in 50 fathoms of water, and when going slower, at still greater depths; but the hollow cylinder of the wings will seldom bear the pressure, at depths much exceeding 100 fathoms. The deep sea lead line, with the machine attached, should be passed forward, from the weather quarter of the vessel, outside all, to the weather cathead, or bowsprit end. If going *l.w.*, it may be dropped, very conveniently, from the weather gangway, about the fore rigging, taking care, in all cases, to drop it perpendicularly into the sea, and not to throw, or swing it, as is sometimes carelessly done. An iron stanchion, to ship and unship, on either quarter as required, with a small snatch-block attached, to pass the line through, will enable 4 or 5 hands to walk the lead line in with ease and expedition. Mr. Massey has recently much improved this machine.

GULF AND RIVER ST. LAWRENCE.

*Magnetic
action of the
shore.*

the variation to vary from this cause from 19° to 31° west. At Port Neuf, and on Manicouagon Point, the needle was also disturbed. But these effects were only noticed when the instrument was placed on the shore. In two instances only, when sailing within two miles of the shore, have we observed any effect of the kind upon the compasses on board the *Gulnare*,* and then only to the amount of a few degrees.

*No effect at a
distance.*

When running from place to place, at greater distances from the coast, nothing of the kind has been noticed; so that I feel sure, that in nine cases out of ten where this source of erroneous reckoning has been alleged as the cause of accidents to vessels, they originated either in errors of the chart, or in the local attraction on board the vessels themselves.

Ice.

6. Among the difficulties of the navigation may be mentioned the ice. In spring the entrance and eastern parts of the Gulf are frequently covered with it, and vessels are sometimes beset for many days. Being unfitted for contending with this danger, they often suffer from it, and are occasionally lost; but serious accidents from this cause do not frequently occur, because the ice is generally in a melting state from the powerful effect of the sun in spring. In the fall of the year accidents from ice seldom occur, except when the winter commences suddenly, or when vessels linger imprudently late from the temptation of obtaining high freights.

Fogs.

7. But all danger from ice is far less than that which arises from the prevalence of fogs: they may occur at any time during the open or navigable season, but are most frequent in the early part of summer; they are rare, and never of long continuance during westerly winds, but seldom fail to accompany an easterly wind of any strength or duration. The above general observation is subject, however, to restriction, according to locality, or season. Thus winds between the south and west, which are usually clear weather winds above Anticosti, are frequently accompanied with fog in the eastern parts of the Gulf. Winds between the south and east are almost always accompanied with rain and fog in every part. E.N.E. winds above Point de Monts, are often E.S.E. or S.E. winds in the Gulf, changed in direction by the high lands of the south coast, and have therefore in general the same foggy character. I speak of

* The schooner in which the survey has been carried on.

GENERAL REMARKS.

5

winds of considerable strength and duration, and which probably extend over great distances. Moderate and partial fine weather winds may occur without fog at any season, and in any locality. In the early part of the navigable season, especially in the months of April and May, clear weather, N.E. winds are of frequent occurrence, and they also sometimes occur at other seasons, in every part of the Gulf and River St. Lawrence.

The fogs sometimes last several days in succession, and to a *Lasting Fogs.* vessel either running up or beating down, during their continuance, there is no safe guide but the constant use of the deep sea lead, with a chart containing correct soundings.

The fogs, which accompany easterly gales, extend high up into *High Fogs.* the atmosphere, and cannot be looked over from any part of the rigging of a ship. They, however, are not so thick as those which occur in calms after a strong wind, and which are frequently so dense as to conceal a vessel within hail; whilst the former often, but not always, admit the land, or other objects, to be distinguished at the distance of half a mile, or more, in the day time.

The dense fogs, which occur in calms, or even in very light *Low Fogs.* winds, often extend only to small elevations above the sea; so that it sometimes happens, that when objects are hidden at the distance of 50 yards from the deck, they can be plainly seen by a person 50 or 60 feet up the rigging. In the months of October and November the fogs and rain, that accompany easterly gales, are replaced by thick snow, which causes equal embarrassment to the navigator.

8. The prevailing winds, during the navigable season, are *Prevailing Winds.* either directly up or directly down the estuary, following the course of the chains of high lands on either side of the great valley of the St. Lawrence. Thus a S.E. wind in the Gulf becomes E.S.E. between Anticosti and the south coast, E.N.E. above Point de Monts, and N.E. above Green Island. The westerly winds do not appear to be so much guided in direction by the high lands, excepting along the south coast, where we have observed a W.S.W. wind at the Island of Bic become west, W.N.W., and N.W., as we ran down along the high and curved south coast, until it became a N.N.W. wind at Cape Gaspé. These winds frequently blow strong for 3 or 4 days in succession; the westerly winds being almost always accompanied with fine, dry, clear, and sunny weather; the easterly winds as frequently

Course of the Winds.

the contrary, cold, wet, and foggy. In the spring, the easterly winds most prevail, frequently blowing for several weeks in succession. As the summer advances, the westerly winds become more frequent, and the S.W. wind may be said to be the prevailing wind in summer in all parts of the River and Gulf. Light south winds take place occasionally; but north winds are not common in summer, although they sometimes occur. Steady N.W. winds do not blow frequently before September, excepting for a few hours at a time, when they generally succeed easterly winds which have died away to a calm, forming the commencement of strong winds, and usually veering to the S.W. The N.W. wind is dry, with bright clear sky, flying clouds, and showers. After the autumnal equinox, winds to the northward of west become more common, and are then often strong steady winds of considerable duration. In the months of October and November the N.W. wind frequently blows with great violence in heavy squalls, with passing showers of hail and snow, and attended with sharp frost.

Thunder Storms.

Thunder storms are not uncommon in July and August; they seldom last above an hour or two; but the wind proceeding from them is in general violent and sudden, particularly when near the mountainous part of the coast; sail should, therefore, be fully and quickly reduced on their approach.

Gradual change of the Winds.

Strong winds seldom veer quickly from one quarter of the compass to another directly or nearly contrary: in general they die away by degrees to a calm, and are succeeded by a wind in the opposite direction. I do not mean, however, by this observation, that they may not veer to the amount of several points. N.W. winds seldom or never veer round by north and N.E. to east and S.E.; but they do frequently, by degrees, to the S.W., after becoming moderate. S.W. winds seldom veer by the N.W. and north to the eastward, but sometimes by the south to S.E. and east. Easterly winds generally decrease to a calm, and are succeeded by a wind from the opposite direction.

In the fine weather westerly winds of summer, a fresh top-gallant breeze will often decrease to a light breeze or calm at night, and spring up again from the same quarter on the following morning: under these circumstances only may a land breeze off the north coast be looked for. I have observed the same off the south coast also, but not so decidedly or extending so

far off shore. I have occasionally carried the north land wind nearly over to the south coast just before daylight, but have never observed the south land wind extend more than 5 or 6 miles off, and that very rarely. Under the same circumstances, that is with a fine weather westerly wind going down with the sun, a S.W. land breeze will frequently be found blowing off the north coast of Anticosti at night and during the early part of the morning. If, however, the weather be not settled fair, and the wind does not fall with the sun, it will usually prove worse than useless to run a vessel close in shore at night in the hope of a breeze off the land. Such is the usual course of the winds in common seasons, in which a very heavy gale of wind will probably not be experienced from May to October, although close-reefed topsail breezes are usually common enough. Occasionally, however, there are years, the character of which is decidedly stormy. Gales of winds, of considerable strength, then follow each other in quick succession and from opposite quarters.

Course of the Winds.

9. The marine barometer, which is at all times of great use to the navigator, becomes particularly so in such seasons; and the following remarks upon its general indications, when taken in connexion with the usual course of the winds and weather in the St. Lawrence, may, therefore, be useful. The barometer has a range from 29 to 30.5 inches in the Gulf and River of St. Lawrence during the navigable season, and its changes accompany those of the winds and weather with a considerable degree of constancy. The fluctuations of the barometric column are much greater and more frequent there than in lower latitudes; and sudden alterations, which in other climates would be alarming, may occur there without being followed by any corresponding change either in the wind or weather. But the navigator should not be inattentive to those minor changes, as a constant attention to the instrument can alone enable him to appreciate those decisive indications of the mercury which seldom or never prove deceptive. The following remarks will apply to those well-marked changes which usually indicate the approach of a gale of considerable strength, or of a shift of wind and weather; the correct anticipation of which is often of the utmost consequence to the safety of a vessel, as well as to the length of her voyage. When, after a continuance of westerly winds and fine weather, the barometer has risen nearly to its greatest height,

Marine Barometer.

Marine Barometer.

Indications of Easterly Winds.

say some tenths above 30 inches, or begins to fall a little, an easterly wind may be soon expected. If to this notice given by the barometer be added a warm hazy atmosphere during the day, and a heavy precipitation of dew at night, with very bright twinkling stars, or a coloured aurora borealis, the approach of an east wind is almost certain. If land be in sight at such a time, and appears much distorted by terrestrial refraction, or if vessels in sight have the relative proportions of their hull and sails changed by the *mirage*, or present double or treble images, such appearances will render the before probable indications of the barometer certain. At the commencement the easterly wind will probably be light with fine clear weather, but this will not last above a few hours if the barometer continues to fall; on the contrary the wind will gradually increase, and as it does so the sky will become overcast by degrees until it is completely clouded. Rain and fog will follow, and continue during the continuance of the easterly wind with little intermission, until they are dissipated by a fresh breeze from the contrary quarter.

and of N.W. Winds.

If the fall of the barometer, during the continuance of the easterly wind, be very slow, the gale will probably continue, and not be very violent: if rapid, it will probably be of short duration, and of greater strength: at any rate, when the mercury falls towards 29 inches, a change is certainly at hand, and the gale will in general come from the N.W. The strength of this succeeding gale will be in proportion to the fall of the barometer, and to the strength of the easterly gale which preceded it. In such a case, there is seldom many hours interval between the one gale and the other. The east wind generally dies away to calm, and in a very few hours, or sometimes in much less time, the N.W. gale springs up. A heavy cross sea remains for some time from the previous gale. The barometer sometimes begins to rise in the interval of the calm which precedes the N.W. gale, at others at its commencement; the fog and rain cease, and the weather becomes quite clear, generally in a few hours, and sometimes almost immediately. The strength of the westerly gale is usually greatest soon after its commencement, and diminishes as the barometer rises, veering gradually to the west and S.W. It is worthy of remark, that the circumstances just mentioned are exactly the reverse of those attending the easterly gale. The latter usually commences with clear weather and a high barometer, light at first

GENERAL REMARKS.

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from the south or S.E., and gradually increasing as it veers to the eastward, with a falling barometer. To return to the westerly gale. If, after it has veered to S.W. and become moderate, the barometer remains steady at a moderate height, fine weather may be expected. If it remains at a considerable height, but still fluctuating and unsteady, within certain limits, variable, but not heavy winds, and variable weather may be expected. If, on the contrary, it rises quickly to a great height, a repetition of the easterly gale will not be improbable. We have experienced seasons in which the barometer may be said to have been no sooner blown up by one wind, than it has been blown down by another, and this stormy alternation to have continued for several months, whilst in others we have scarcely had a double-reefed top-sail breeze during the whole summer.

There is in fact so great a difference in the phenomena of the weather in different seasons, that it becomes very difficult to write anything respecting it, that shall not be liable to many exceptions. There are, however, some strongly marked cases of connexion, between the indications of the barometer and changes of the winds and weather, which, within our experience of eight or nine years, have been subject to few, I might almost say no, exceptions. The first of these cases is that most common one, which I have endeavoured to describe, of an easterly gale, with a falling barometer, being always wet and foggy, and succeeded by a strong wind from the opposite quarter with a rising barometer. A second case, not of so frequent occurrence in common seasons, excepting in spring or early in summer, is the easterly wind with a rising barometer; which, although it may not be at first for a few hours, will almost always become fine and clear, and end in fine weather. A third case may be considered certain: if the barometer fall suddenly and greatly, at any time, a northerly, and most probably a N.W. gale, of great strength, may be confidently expected. It does not follow that it will be immediate, for it may be preceded by a strong gale from S.W., for a few hours, during which the barometer will seldom rise, and even, probably, continue to fall, but when the S.W. gale dies away, the northerly, or N.W. will soon succeed, with a rising barometer.

In conclusion, I may remark that as, on the one hand, a considerable fall of the barometer may occur, without being followed by a strong wind; so, on the other, a breeze of considerable

Marine Barometer.

Certainty of its Indications.

Marine Barometer.

strength may come on without any indication from the barometer : but not anything that deserves the name of a gale. There has never, within our experience, occurred a gale, so heavy as to be of serious consequence to a good vessel, the approach of which has not been indicated by the barometer. But it must be remembered that a high barometer, in this climate, and under the circumstances which I have mentioned, is often indicative of an easterly gale. It is remarkable that, in the gulf and estuary of the St. Lawrence, a high barometer may be considered as the forerunner of wet and foggy weather, which usually accompanies its fall : whilst a low barometer renders it equally probable that dry weather will ensue, since it often accompanies its rise. I am fully of opinion, that the marine barometer is of the greatest assistance in the navigation of the Gulf and River St. Lawrence, and that by attending constantly to its state and changes, with reference to the winds and weather which preceded them, combined with the indications afforded by the appearance of the sky, &c., those changes of the wind and weather, which are about to take place, may be anticipated with a degree of certainty sufficient, in most cases to enable us to avoid being caught on a lee-shore, or in an unsafe anchorage, as well as to regulate our course in a voyage, in anticipation of the coming change.

CHAPTER II.

GENERAL REMARKS RESPECTING THE CURRENTS AND TIDAL
STREAMS IN THE ST. LAWRENCE.

10. Prevailing Currents.—11. Currents at the Entrance of the Gulf.—12. Current in through the Strait of Belle Isle.—13. Its Course and entering the Gulf.—14. Main Current of the River.—15. Its Course and Rate.—16. Round Point de Monts.—17. Along the South Coast.—18. Remarks on the Tides of the North Coast, eastward of Point de Monts.

10. ~~The~~ time of high water on the full and change days of the moon, and the rise in spring and neap tides at different places, will be found in the Table at the end of this book. Local peculiarities will be mentioned in their proper places. At present I shall chiefly confine myself to a general description of those great currents, and tidal streams, which, although they may be subject to occasional interruption and modification, seem, nevertheless, to depend on constantly existing causes. These currents extend over very large spaces, though varying according to locality and other circumstances, and they are altogether so important a feature in the navigation, that some general knowledge respecting them is indispensable both to the safety and expedition of vessels in the gulf and estuary of the St. Lawrence.

*Prevailing
Currents.*

11. It is a generally received opinion that a current sets constantly to the south-eastward out of the Gulf of St. Lawrence, between Newfoundland and Cape Breton Islands, and also that it is frequently deflected to the southward, towards the shores of the Island last named, by another current from the northward, which is said to enter the Gulf by the Strait of Belle Isle.

*Currents at the
entrance of the
Gulf.*

I have myself observed that a current sets out, between Cape Ray and St. Paul Island, during westerly winds and in calm weather; but it is checked by easterly winds, and I believe that it may sometimes run in a contrary direction from the same cause. Northerly winds, and perhaps also the above-named current from the northward, may cause the stream to set to the southward towards Cape Breton Island. But the truth is, that winds, both present and at a distance, possess so powerful and irregular an

*S.E. Current
from the Gulf.*

Currents at the entrance of the Gulf. action upon the set and strength of the currents and tides in this entrance of the Gulf, that I can say nothing certain or definite respecting them.

Current in through Belle Isle Strait.

12 The reality of a current inwards through the Strait of Belle Isle, is confirmed by the presence of icebergs, which it transports into the gulf every summer, against the prevailing S.W. winds; frequently carrying them as far as Mecatina, and sometimes even to the neighbourhood of the east point of Anticosti. It is probable that this is a branch of the great current from Davis Strait, which is known to run along the coast of Labrador, and to transport numerous icebergs far to the southward every year. This current will be mentioned again under the head of the Strait of Belle Isle. Its strength is very much increased by a prevalence of N.E. winds: at such times it runs at the rate of 2 knots, through the Strait, and for 30 to 40 miles further to the westward; diminishing gradually in force as it spreads out in the wider parts of the Gulf. Usually, however, its rate is much less. At times, when S.W. winds prevail, it becomes very weak; and it has even been reported to me, that a current has been observed setting out of the Gulf, in a contrary direction, to the N.E., for days together, but this was never observed by us during either of the three seasons which we passed there. There is, however, no doubt that this current is extremely irregular, as might be expected at the narrow outlet of a great inland sea, where winds, both within and without, must of necessity possess great influence.

Sometimes it sets out.

Course of above Current up the Gulf.

13. After entering the Gulf, it runs along the north, or Labrador coast, at the distance of 2 or 3 miles from the outer islands; leaving a narrow space inshore, in which the streams of the tides, when uninfluenced by winds, are tolerably regular. Passing outside of Mistanoque, the islands of Grand Mecatina, and the South Maker's Ledge, it pursues a direction given to it by the trending of the coast, till it is turned gradually to the southward, by the weak current which is often found coming from the westward between Anticosti and the north coast, during westerly winds, and which is set off to the southward from Natashquan Point. The united streams continue their southern course at a rate diminishing as they become more widely spread, and which seldom exceeds half a knot: and, finally, joining the main downward current out of the St. Lawrence, of which an account will be given immediately

they all pursue a S.E. direction towards the main entrance of the Gulf, between Cape Ray and the Island of St. Paul. It is this current, from the northward, which is felt by vessels crossing from off the Bird Rocks towards Anticosti: and which, together with neglecting to allow for the local attraction of the compass, has been the principal cause of masters of vessels so often finding themselves, unexpectedly, on the south coast. Many shipwrecks have arisen from this cause near Cape Rosier, Gaspé, Mal Bay, &c.

*Course of above
Current up the
Gulf.*

Both these currents, viz., that from the northward, and the main downward current of the St. Lawrence, are modified by the tides, but in a way directly contrary: for the northern current, in through the Strait of Belle Isle, is accelerated by the flood, and checked by the ebb; whilst the other is accelerated by the ebb, and checked by the flood tide. These modifying causes, namely, the tides and winds, give rise to various combinations, and consequent irregularities, in the direction and strength of these streams, which it is extremely difficult at all times to estimate and allow for correctly.

*Effect of the
Tides on this
Current.*

14. The current along the south coast appears to be superficial: at least we found it so in the lower parts of the estuary, where observations upon the specific gravity of the water on the surface, and taken up from different depths, proved to us that the water of the St. Lawrence and its numerous tributary streams was widely diffused over the Estuary.* It has also been observed

*Main Current
of the River.*

* I give the following out of a number of observations, made by Dr. Kelly on board the *Gulnare*, not alone with reference to the nature of the current, but as also showing, that a very moderate degree of agitation of the water is sufficient at times to mingle the warmer surface water with the colder substrata, which always exist at a few fathoms of depth, and thus, by a reduction of temperature of the surface, produce, if the state of the air and dew point be favourable, one of those low fogs, which can often be seen over the mast-head.

*Temperature of
the River.*

On the 8th July, 1831, we crossed from near Matan, on the south coast, to St. Nicholas Harbour, on the north, with a light S.W. wind and fine weather, and during the flood tide; when near the middle of the Estuary, we had 132 fathoms over a bottom of blue mud. The temperature of the air 64° Fahrenheit.

Dew Point by Daniel's Hygrometer 58°		Specific gravity (examined at 50° Fahr.)
Water at the surface 60°	. . . . .	1.0180
,, 30 fathoms 35°	. . . . .	1.0260
,, 50 fathoms 34°	. . . . .	1.0265

A fresh breeze from the westward commenced in the evening, and con-

GULF AND RIVER ST. LAWRENCE.

*Main Current
of the River.*

that the current is strongest in spring, soon after the opening of the navigation, when the rivers are swelled by the recently dissolved snows of the winter. But, although, generally speaking,

*Temperature of
the River.*

continued all night, which reduced the temperature of the surface water to 39° by 9 A.M., on the morning of the 9th, when the temperature of the air was 62° with a dense fog, the wind having died away to a light breeze. The fog was seen over from the rigging 40 or 50 feet above the sea. At noon it was calm, and the temperature of the surface had risen to 57°, and the fog in consequence had nearly, but not entirely disappeared.

On the 9th July, 1831, at noon, we were becalmed 2 or 3 miles to the southward of Point de Monts, and carried to the S.S.E., at the rate of 1½ knots, by the current. It was nearly high water by the shore, and, consequently, about an hour and a half before the time when the stream of flood ceases.

The temperature of the air	. . . . .	62°	Specific gravity (examined at 50° Fahr.)
" Dew Point	. . . . .	61°	
" water at the surface	. . . . .	57°	1.0172
" " ½ a fathom	. . . . .	44°	By Six's Register Therm.
" " 5 fathoms	. . . . .	40°	
" " 10 fathoms	. . . . .	35°	
" " 100 fathoms	. . . . .	35°	1.0275

During the night we had a very strong breeze, which, by the morning of the 10th, had reduced the temperature of the surface water to 37°, and the air to 44°.

On the 19th June, 1832. Point de Monts, N. 61°. E. distant 7 miles. Time of tide, half ebb. Wind light, from the westward. Rate of current, 2 knots to the S.S.E.

The temperature of the air	. . . . .	49°	Specific gravity (examined at 50° Fahr.)
" Dew Point	. . . . .	44°	
" water at the surface	. . . . .	44°	1.0189
" " 10 fathoms	. . . . .	37½°	1.0232
" " 20 fathoms	. . . . .	39°	1.0246
" " 47 fathoms	. . . . .	33°	1.0262
" " 104 fathoms	. . . . .	36°	1.0275

On this last occasion, the line and attached machine remained perpendicular, from which we inferred that the whole body of water moved down the Estuary in the ebb tide. At the time of the preceding observations the line remained perpendicular only as long as the machine was not lowered down beyond 3 fathoms from the surface. At 5 fathoms the line drew strongly out to the N.N.W., and still more strongly when the machine was lowered to greater depths. Hence it appeared, that in the flood tide, only a thin superstratum of comparatively light and warm water moves down, and that the colder and heavier water beneath is either stationary, or moving up the Estuary.

It also appears from the preceding, and many other similar observations, that in fine weather, the comparatively warm and fresh water of the St. Lawrence, and its numerous tributary streams, floats on the surface, but that when the waters are agitated, by any cause, it becomes mingled with the constantly cold water beneath. The temperature of the surface, therefore, depends less upon the warmth than upon the strength of the winds.

there seems no doubt that this current is the tribute of the St. *Main Current of the River.* Lawrence on its way to the ocean; yet, in the upper part of the estuary it is not alone, and at all times, caused by the discharge of the St. Lawrence, but depends also upon peculiarities in the set of the tides. Thus, when our observations had confirmed the truth of the report, that the current always ran down on the south side of the Estuary from a few miles below Red Island towards the Island of Bic, we could not at first account for the fact; for it appeared impossible that this could be the comparatively fresh water of the St. Lawrence flowing on the surface towards the sea, when we knew that the whole body of water a few miles above, from shore to shore, on either side of Hare Island, and also in the Saguenay River, was running up during the flood tide. Attention, and numerous observations, together with an examination of the temperature and specific gravity of the water, informed us that this was an eddy flood, which is thus explained.

The flood tide ascends in a wide channel more than 100 *The Eddy Flood unites with the downward Current.* fathoms deep: when it arrives at the comparatively narrow pass formed by Green Island, Red Islet Reef, and the extensive shoals off the entrance of the Saguenay River, it is obstructed thereby, as well as by the shoalness of the channel to the southward of Hare Island. There is not room for so great a volume of water to pass, and part of it is in consequence turned back, and forms an eddy flood, setting from below Red Islet Reef, towards the Razade Islets, as shown by the arrows in the chart. During the ebb tide, the stream of the Saguenay sets over to the southward in the same direction, hence the current on that side is always down.*

* Since the eddy flood above mentioned exercises a considerable influence *Low Fogs produced by this eddy flood.* over the climate near the shore off which it runs (its course being from the Red Islet Reef passing near the Razade Islets to the Island of Bic); and also occasions those dense and low fogs, and peculiar forms of mirage, or terrestrial refraction, which depend upon a temperature of the surface water lower than that of the air, or its dew point; it may not be altogether devoid of interest to give a few additional remarks concerning it.

Of the fact of its being really the stream of flood, although running down *Proofs of its being the eddy flood.* the Estuary, we had ample opportunity of convincing ourselves; especially during the nine or ten days we were employed in sounding within the limits above mentioned; and during which we made many observations with the object of ascertaining the set, strength, and course of this peculiar stream. I select the remarks made on the 19th July, 1831, as being alone nearly sufficient to establish the fact of this part of the general downward stream, or current, being the flood tide. The Gulnare was then at anchor, in 10 fathoms, about 1 mile N.E. of the eastern Razade Islet. In the

Eddy Flood.

There is no upward stream of the tide (excepting so close in-shore as to be useless to ships) all along the south coast from

last quarter ebb the stream ceased, being prevented from coming to us by the shoals, which are dry at low water, between Green and Basque Islands, and the main, but it still continued to run strongly down a short distance outside of our anchorage.

There was no stream at the vessel until it was past a quarter flood by the shore, when the downward stream commenced and continued during the remainder of the flood at a greater rate than during the preceding or following ebbs. Soon after high water by the shore the downward stream again ceased for a short time, after which the first of the ebb came off the shoals and then turned down the estuary as before. Now it appears that the eddy flood did not reach us till the end of the first quarter flood by the shore, because time was necessary for the tide to ascend the deep and unobstructed channel to the northward, and to rise and accumulate at the obstructed part of the channel above us, before it was compelled in part to retrograde, and descend to us through a distance of 16 or 17 miles. It ceased again soon after high water, because the stream of flood had ceased above, there being only a few minutes' difference in the times of high water at the two places.

A ship becalmed below the Red Islet Reef was brought down to us by the eddy flood, and drifted past about half a mile outside of us. And, on another occasion, during the flood tide, when we sailed from near Red Islet to off Bicquette, passing within 2 or 3 miles of the Razades, we were carried a-head of our reckoning at the average rate of $2\frac{1}{2}$ knots per hour. When beating against a westerly wind, on many occasions, between the Island of Bic and the Razades, we never could gain ground to windward, excepting during the last quarter of the ebb and the first of the flood tide.

The specific gravity of the water of this stream during flood tide was found to be nearly as great as the surface water of the Gulf, and higher than that of the Estuary lower down; and it was also, like the latter, when taken from considerable depths, or when violently agitated by strong winds, extremely cold. Its temperature was usually between 38° and 45° , and was never found higher than 49° , Fahrenheit. We have seen it as low as 39° in every month from June to September inclusive, and that at times and under circumstances when the surface water of the Estuary in other parts was usually about 60° , and when the fresh water of the St. Lawrence above was at an equally high temperature. The great specific gravity and low temperature of this stream are incompatible with the popular supposition of its being, in this part, the lighter and fresher water of the St. Lawrence flowing on the surface towards the sea.

To the same cause which gives rise to the retrograde course of this stream of flood must also be attributed its superior specific gravity and low temperature. For as the great body of the flood tide, moving in the deep North Channel, meets with resistance at the shoals of the Saguenay and Red Islet, the cold water of the Estuary, which everywhere exists at a very moderate depth, is forced to the surface, and thus, together with the irregular bottom, gives rise to the violent whirls and ripples which abound in that vicinity. The thin superstratum of warmer water is thus mingled with, and lost, in the superior quantity of colder water from beneath, and a great reduction of temperature effected.

*Cause of New-**foundland Fogs.*

May not the low temperature often found over shoals in the sea be attributed to a similar cause, and especially the lower temperature of the water

Cape Gaspé to a few miles below Red Islet, in consequence of the union of this eddy flood with the main current of the river; and they have, therefore, so much influence on the navigation that I shall endeavour to trace their course more particularly.

15. Commencing from a short distance below the Red Islet Reef, the current is there very strong—about 4 knots. It decreases in velocity as it proceeds to the south-eastward, slanting over towards the Razade Islets; off which its rate is from 2 to 3 knots. It runs strongly along the northern edge of the Bank of Soundings off the south coast, upon which, especially in spring tides, a weak stream of flood will be found flowing in the opposite direction, and the boundary of the two streams is usually marked by a strong ripple. From Father Point to Cape Chatte, the rate of the downward current varies from a half to 2 knots, according to the tide, direction of the winds, and season of the year.

During the ebb tide the stream runs down on both sides, *during the Ebb,* stronger on the south than the north coast, and weakest in the middle of the Estuary. It is deflected, or turned off to the southward, by the Points Mille-Vaches, Bersimis, Manicouagon, and Point de Monts, and by the ebbing streams of the large rivers between them: a circumstance which should be carefully attended to by vessels coming up with a northerly wind; as they will infallibly be set over to the southward upon a lee-shore, if they do not make the necessary allowance by keeping their wind well over to the northward.

During the flood tide this stream still continues to run down outside the Bank of Soundings off the south coast, although with diminished velocity, and is felt about half way over towards the north shore. In the middle of the Estuary there is usually slack water; whilst along the north coast the stream of flood is regular in its recurrence, increasing in force as we ascend the Estuary. The strength of the stream of flood is greatest in shore, and diminishes as we proceed over to the southward, till at the distance of about 3 leagues it becomes insensible. These differences in the strength and direction of the streams produce strong ripples *during the Flood,* *produces Ripples.*

on the Bank of Newfoundland, as compared with the neighbouring sea? for the great current, which brings the icebergs down along the coast of Labrador from the northward, must meet with obstruction in its course to the southward from these Banks, and the cold water, in consequence, be forced to the surface; and, if this be so, we may probably find a reason for the prevalence of fogs upon these Banks.

Main Current, various parts of the Estuary, but their position varies with the different times of tide, and perhaps from other causes, so that they cannot safely be trusted for any guidance to the seaman.

*round Point de
Monts,*

16. Round Point de Monts there is little or no stream of flood, excepting very close in-shore; the downward current is constant, or nearly so, off that point; and it requires a fast-sailing vessel to beat round it against a westerly wind. Point de Monts turns this current over to the S.S.E., at a rate varying from 1 to 2 knots; so that a vessel, having a west wind, and standing over to the southward on the starboard tack, will be carried towards the south coast at a rapid rate, having the current on her weather quarter; during her board back to the northward, she will be retarded, the current being then directly opposed to her course. When sailing at the rate of 4 knots, it will usually require only about half the time to go from near Point de Monts over to the south coast, that it will take to return from the latter to the former. This is a most important circumstance, which it is necessary to carefully guard against, when beating up the Estuary in this part during dark nights, and, especially, in foggy weather.

*below Point de
Monts it crosses
to the S. coast.*

17. Below Point de Monts the current is no longer felt near the north coast, nor, indeed, any where to the northward of a line joining Point de Monts and Anticosti. It is confined to the neighbourhood of the south coast, which it follows in its curve to the southward, running strongly past Cape Gaspé, Flat Island, and Bonaventure Island; whence, curving gradually to the south and S.E., it continues its course towards the entrance of the Gulf, with a rate very much lessened in consequence of the great space over which it is now spread. The usual breadth of this stream from Magdalen River to Cape Gaspé is 3 or 4 leagues; but this, I believe, is not uniform. When S.W. winds prevail, it appears that this current, or a branch of it, is driven over from the vicinity of Magdalen River towards Anticosti; part of the stream running round the west point of that island, sets across nearly towards Large Island, (one of the Mingans,) whence turning gradually down outside the Mingan and Esquimaux Islands, and along the north coast, it sweeps round the curve to the westward of Natashquan Point, and is turned off to the southward, as has been already mentioned (art. 13). The other part sweeps round the large curve, or bay, between the west and S.W. points of Anticosti, and is turned off to the south-

ward by the latter point, frequently causing a great ripple off it, *Main Current*, which has been mistaken for breakers on a much more extensive reef than exists there.

I have noted the rate of this current, off different parts of the south coast between Capes Chatte and Gaspé, in the months of June, July, August, and September, and in different years, and scarcely ever found it the same. It varied between 1 and 2 knots in westerly winds. It was weaker, often nearly insensible, in easterly winds; and in one instance, off Mont Louis River, in a calm which was followed by a strong breeze from the eastward, it could not be perceived.

18. Vessels beating up the St. Lawrence against westerly winds usually experience little difficulty in making good way to windward, after having weathered the west point of Anticosti and arrived on the north coast; because there is seldom any current on that side, and the tides, although weak, are tolerably regular. It is in general very easy to beat from the Seven Islands to Point de Monts; for there the stream of flood is stronger than the ebb; the latter, as well as the current, being turned off to the southward by Point de Monts. There seems, at times, also to be an eddy current there, sweeping round the great bay or curve between the above-named points. It sets off from about Egg Islet to the S.S.W.; and is the probable cause why vessels, which shape a direct course for Point de Monts with a leading N.W. wind off the land at night, so often find themselves obliged to haul up for, or unable to fetch, the light.

Tides regular on N. coast, E. of Point de Monts.

Any further remarks respecting the tides and currents will be of a more local nature, and will, therefore, be best given where the particular places or parts of the coast are described. The object here was to give a condensed view of the principal streams which mainly affect a vessel in her voyage either up or down through the Gulf and Estuary; and in the following Chapter will be found their usual effects, and the allowances which should be consequently made.

CHAPTER III.

GENERAL DIRECTIONS FOR NAVIGATING THE GULF AND RIVER
OF ST. LAWRENCE.

19. Vessels entering the Gulf should endeavour to make the Island of St. Paul.—20. St. Paul Island to the Bird Rocks and Magdalen Islands.—21. Bird Rocks to the Island of Anticosti.—22. The Passage northward of Anticosti.—23. The Passage southward of Anticosti.—24. Anticosti to Point de Monts, with fair and with beating Winds.—25. Point de Monts to Bicquette Island, with easterly Winds and thick weather. An instance of the fatal consequences of neglecting the Deviation of the Compass. Pilots.—26. Point de Monts to Bicquette, with southerly and with northerly Winds. Instances of the effects of the Currents and Tides.—27. Bicquette to Green Island Lighthouse.—28. Beating up the Estuary with westerly Winds.—29. Returning down the Estuary and Gulf.

Landfall.

19. VESSELS bound to Canada, or to any of the ports in the Gulf of St. Lawrence, should endeavour to make the Island of St. Paul, which, being of considerable elevation and bold all round, may, with care and a good look out, be made at night, or even in fogs, unless the former be very dark, or the latter very thick.

*Island of
St. Paul.*

On this island a lighthouse is about to be erected, which will be of the utmost assistance to mariners; it lies in the main entrance to the Gulf of St. Lawrence, between Cape Ray, at the S.W. extremity of Newfoundland, and Cape North, near the northern extremity of Cape Breton Island. From the south point of the Island of St. Paul, Cape North bears W.S.W. $\frac{1}{4}$ W. by compass,* distant 13 miles; and from the north point of the same island, Cape Ray bears E. by N., distant $41\frac{1}{2}$ miles. In approaching St. Paul from the S.E. with northerly winds, the current, which I have before mentioned as at times coming from the northward, and setting towards the shore of Cape Breton, should be guarded against. The south coast of New-

* In these Directions all bearings are magnetic, or given by compass, unless when the contrary is expressed. The latitudes and longitudes of the principal points, variations, &c., will be found in a table at the end of the book.

foundland, eastward of Cape Ray, is broken, rocky, and dangerous. The tides and currents, being influenced by the winds, are irregular; whilst all southerly and easterly winds, and often also south-westerly winds, bring a thick fog, which is most dense near the lee-shore. On these accounts, this coast should not be approached, excepting with a decided northerly wind and clear weather. (For description of St. Paul, see art. 30.)

20. After having made St. Paul, vessels bound to Canada should endeavour, if the weather be clear, to make the Bird Rocks, the largest or south-eastermost of which bears from the north point of St. Paul N.N.W. $\frac{1}{4}$ W., 55 miles.

There is a deep channel between St. Paul and the bank on which the Magdalens, Bryon Island, and the Bird Rocks are situated. This channel is 12 miles wide, and no soundings have been found in it with 60 fathoms of line. Twelve miles N.W. from St. Paul, on the S.E. extremity of the bank above mentioned, there are 50 fathoms of water over a bottom of fine sand; and $13\frac{1}{2}$ miles from the island, on the same line of bearing, there are 35 fathoms, the bottom being the same, with the occasional addition of gravel. From this point the water shoals gradually towards the Magdalens, distant 42 miles. Following the eastern edge of the bank to the northward, inclining gradually to the N.W., regular soundings extend from 28 to 35 fathoms over sand, stones, and broken shells; the latter depth being where the Great Bird Rock bears W.N.W.; and when the same rock bears W.S.W. $\frac{1}{4}$ W., distant $13\frac{1}{2}$ miles, there will be 50 fathoms over fine sand on the edge of the bank, off which there is no bottom with 70 fathoms of line. At the distance of 10 miles from the Rock, and on the same line of bearing, there are 43 fathoms; and at 6 miles 33 fathoms, shoaling gradually in to 24 fathoms, within a mile of the Rocks. This bank is an excellent guide up to the Bird Rocks at night, or in thick weather, which almost always accompanies easterly and southerly winds: but under such circumstances it will be safer to run along the northern edge of the bank, taking care not to come into less than 40 fathoms, than to attempt to make the Bird Rocks. When well past them by the reckoning, a course can be shaped up the Gulf.

In northerly winds the weather is usually clear; and, if the ship be far enough to windward, it will be advisable to stand to

*Avoid S. coast
of Newfoundland.*

*From St. Paul
to the Bird
Rocks.*

*Bird and Mag-
dalen Islands'
Bank.*

*St. Paul to the
Magdalen
Islands.*

*Magdalen
Islands.*

the westward and endeavour to make Entry Island, taking care to avoid Doyle Reef and the Sandy Spit off the east end of the Magdalens, by not approaching the islands in that part nearer than 20 fathoms. Under the lee of these islands a smooth sea will be found, sufficient guidance by the soundings, and good shelter and excellent anchorage in Pleasant Bay. (See Chap. IV. for a description of these islands.)

Another advantage of following this course arises from the circumstance that the N.W. winds very generally veer to the S.W., so that, if a vessel has passed to leeward of the Magdalens with the northerly or N.W. winds on the starboard tack, the succeeding S.W. wind will enable her to stand on the opposite tack towards Cape Gaspé.

From the north point of the Island of St. Paul to the east point of the Magdalens the course is N.W. $\frac{1}{4}$ W., distance 56 miles; and to Entry Island, N.W. by W. $\frac{3}{4}$ W., 63 miles.

*Bird Rocks to
Anticosti.*

21. From the north Bird Rock the lighthouse on the S.W. point of the Island of Anticosti bears N. $46^{\circ} 13'$ W. true, or N.N.W. by compass, 134 miles; and the east point of Anticosti N. $14^{\circ} 46'$ W. true, or N. $\frac{3}{4}$ E. by compass, 80 miles.

*Soundings be-
tween them.*

After leaving the Bank of Soundings, northward of the Bird Rocks, the water is very deep all the way until near the shores of Anticosti, there being no bottom with 80 fathoms of line, nor robably at much greater depths. In making this part of the voyage up the Gulf, the frequent current from the northward, mentioned (art. 13) as having been one of the causes of shipwrecks in the neighbourhood of Capes Rozier and Gaspé, Mal Bay, &c., should be considered. Accidents, however, from this cause can never occur if the lead be used; for, upon consulting the chart, it will be seen that there are soundings to be obtained nearly all the way upon, and to southward of, a line joining the Bird Rocks and Cape Gaspé, whilst a few miles to the northward of that line there is no bottom with 80 fathoms of line.

*Revolving
Light on S.W.
Point of Anti-
costi.*

*Heath Point
Light.*

With a fair wind the object should be to make the lighthouse or revolving light upon the S.W. point of Anticosti; and, with westerly winds, any part of the coast of that island which can be attained. When the lighthouse on Heath Point shall be lighted it will be easy to make the east end of the island at night, if the weather be clear; and, if the weather be thick, the Bank of Soundings, which extends off it 28 miles to the south-eastward,

may serve to determine the vessel's position by the lead. At the distance from the island above named there are 62 fathoms of water, shoaling gradually in towards the island, as will be seen by the chart.

22. In the event of a vessel being near the eastern extremity of *Passage North of Anticosti.* Anticosti, and having succeeded in making the east point, or the light on Heath Point, with a S.W. wind, it will often be preferable to proceed to the northward of the island, where there is a good channel, rather than to tack and stand back to the southward and eastward. Under the lee of Anticosti she will, in this case, have a smooth sea, and often also clear weather, whilst there is a heavy swell and frequently a thick fog to windward of it. She will, moreover, avoid the current out of the St. Lawrence, which runs constantly with westerly winds between the south coast and Anticosti; and thus be able, at all times, to make way to the westward in moderate weather. At night, or in foggy weather, the Bank of Soundings off the north coast, and farther westward the banks off the Mingan Islands, will safely guide her, even although the land should not be visible.

All the way from Natashquan Point to the River St. John, *Banks between westward of the Mingan Islands, there are banks of sand, gravel, broken shells, and bits of coral extending off the coast many miles. Off the Mingan Islands these banks extend halfway across to Anticosti. The depth of water upon them is very various: to the eastward, or below the Mingan Islands, it is in general between 30 and 50 fathoms; but in some few places it exceeds the latter depth, whilst in others there is as little as 19 fathoms. Abreast the islands there is still less water occasionally; but to the southward of these Banks, and between them and Anticosti, there is a very deep channel; in which, from opposite the east point to opposite the west cliff, the soundings exceed 100 fathoms. Proceeding westward, the soundings gradually decrease to 60 fathoms off the north point, where they become irregular for a few miles, varying from 50 to 70 fathoms, with occasional rocky bottom; and then deepen again, with mud bottom, further to the westward. In all this deep water channel, with the single exception which has been stated, the bottom is, for the most part, of blue mud. Such a remarkable difference in the nature of the bottom, as well as in the depth of water, renders it comparatively easy to take a ship through this channel at night,*

*Passage North
of Anticosti.*

or in foggy weather. But in order to effect this with safety the vessel should be furnished with Massey's patent sounding machine and lead, or other similar instrument, which must be freely used as she runs along the southern edge of the banks of sand, gravel, and shells, sheering occasionally to the southward into the deep water and muddy bottom, to make sure of not getting too far to the northward.

*Reefs off St.
Genevieve and
Hunting Is-
lands.*

The dangers of this channel may be said to commence with the reefs off St. Genevieve and Hunting Islands; on approaching which from the eastward, the chart should be carefully consulted, for they are very dangerous, and there are some deep water soundings, between 50 and 70 fathoms inside the outer banks, which might lead to a mistake if care were not taken to keep on the southern edge of the outer banks.

*Deceitful holes
in the Banks.*

These deep water soundings commence off the high peninsula Watcheeshoo, and extend, irregularly, being deep holes in the banks, to within a very short distance of Bowen Rocks off St. Genevieve Island. But the ship, if properly conducted, will be at least 3 leagues to the southward of the rocks off St. Genevieve; and as there are soundings in a moderate depth of water, 5 or 6 miles from Collins Shoal, the outer danger off Hunting Island, and the channel, excluding the reefs, is there 23 miles wide, there seems no difficulty in this part which may not with common prudence be avoided. Proceeding westward, the chaunel contracts gradually to the narrowest part, which is between the reefs off the north point of Anticosti and off Mingan Island, where it is $13\frac{1}{2}$ miles wide. To pass this safely, at night or in foggy weather, it is necessary that the lead should be kept constantly going as the vessel runs along the southern edge of the bank off the Mingan Islands, and she should not be allowed to go to the northward into less than 30 fathoms of water.

Collins Shoal.

If the vessel should be met by a westerly wind, down the channel, it will be attended with clear weather, and the white cliffs of Anticosti, which extend from the east point westward to opposite St. Genevieve, will easily be seen. A vessel may stand in without fear to within a mile or two of this part of the coast, which, with the exception of the reefs off Fox Bay, is bold and free from danger. Further westward, the coast is low and shelving, and reefs extend further off. In the board to the northward at night, the soundings on the bank will show when to tack.

Fox Reefs.

It has been remarked already (art. 17) that, in westerly winds, *Passage North of Anticosti.* there is a weak current down this channel, but it is not constant, and its rate seldom exceeds half a knot. Sometimes it is imperceptible during the flood tide, and runs even the other way on the approach of easterly winds. *Current down this channel.* Vessels, however, should be aware that on arriving off the north point of Anticosti with a west or S.W. wind, this current will almost always be found setting over to the N.E., being turned off into that direction by the west end of the island. Confined within a comparatively narrow channel, it is here stronger than elsewhere, running, in the ebb tide, about a knot, and in the flood tide, half a knot in the offing.*

23. Vessels meeting with a westerly wind in the south channel *Passage South of Anticosti.* should stand over towards the Island of Anticosti, and make boards, off and on, of 3 or 4 leagues, to avoid the current out of the St. Lawrence. In beating between Cormorant Point and South Point, off which there is a dangerous reef, keep the lighthouse on Heath Point open of Cormorant Point. In standing in shore at night to the eastward of the S.W. point, do not bring the revolving light to bear to the westward of N.N.W., or when standing in shore to the westward of it, to the southward of S.S.E. $\frac{1}{2}$ E. Further particulars respecting the navigation along the shores of Anticosti will be found in the next Chapter.

In moderate weather a vessel will generally gain ground to windward all along the south coast of the island, but care should be taken to avoid being becalmed, near the shore, between the S.W. and west points, where both the swell and current set in shore, and where the bottom being of clean flat limestone, an anchor will not hold. It is by no means uncommon off this part of the coast, for the fine weather W.N.W. breeze of summer to die away suddenly to a calm, so that a vessel beating here, should stand off shore on the first appearance of a decrease of wind. In the month of August of two following years, I was nearly driven on shore, under St. Mary Cliffs, by a sudden calm. The sea was at first perfectly smooth, but a heavy swell from the south-westward soon commenced, and continued for 3 or 4 hours before the breeze which caused it made its appearance. *Danger of a calm in this channel.*

* Remarks on the tides in-shore, and on the dangers in this Channel, will be found in the following Chapter under the head of Anticosti, and also in Chapter VII., which will describe the north coast of the Gulf from Nantashquan to Mingan Island.

GULF AND RIVER ST. LAWRENCE.

*Passage South
of Anticosti.*

From the S.W. point of Anticosti to Cape Henry (Ellis Bay) the bearing is N. $52^{\circ} \frac{1}{2}$ W. true, or N.N.W. $\frac{1}{2}$ W. by compass, and the distance 39 miles; and 8 miles further, nearly in the same direction, bring us to the west point of the island.

Having made South-west Point, and being 4 or 5 miles off it, with a fair wind, a course should be steered along the coast, so as to pass 8 or 10 miles to the southward and westward of Cape Henry and West Point. N.W. $\frac{1}{2}$ N. will be a safe course at night or in thick weather, when the lead should be hove every half hour. With this precaution there is no danger of being set too near the coast, since there are soundings in less than 40 fathoms, at a distance varying from 5 to 3 miles off shore all the way from the S.W. point to the west end of the island.

*Anticosti to
Point de Monts.*

24. From the west point of Anticosti, the south extremity of Point de Monts bears S. $73^{\circ} \frac{1}{4}$ W. true, or W. $\frac{1}{2}$ N. by compass, distant 116 miles.

*Soundings be-
tween Seven
Islands and
Anticosti.*

An inspection of the chart will show that there are soundings in various depths, between 50 and 100 fathoms, from the western end of Anticosti to nearly opposite the Seven Islands, whilst to the southward there is no bottom at a much greater depth. These may be of use in discovering the situation of a vessel when light winds and fogs prevail for several days in succession, and the land in consequence has not been seen.

*Course to Point
de Monts.*

When the vessel has arrived off the west point of Anticosti, with a fair wind still continuing, a course should be steered well to the northward, especially with northerly winds, say for about Egg Island. She will thus avoid the strength of the current, and the possibility of being set over too near the south shore by its acting on her starboard-bow. When she has run about half way across she should haul more to the southward, so as to insure clearing Point de Monts.

*Making the
Light at Point
de Monts.*

If the weather be clear, there will be no difficulty in making the lighthouse on Point de Monts,* and the fixed light at night can be seen, under favourable circumstances, 7 or 8 leagues

* Point de Monts received its name from the Sieur de Monts, a celebrated French commander, who was there in the beginning of the 17th century. Point des Monts is an inaccuracy, and Bald Mountain Point is absurd, as there is no mountain near the Point.

Cape Chat should be Cape de Chatte, so called from the commander who preceded the Sieur de Monts; and the Cape Misha of the old charts should be Cape Michaux.

from the fore-yard of a ship. But if the weather be thick, as it commonly is with a fair wind for running up, great caution is necessary. In such circumstances, after having run within about 15 miles of Point de Monts by the reckoning, sail should be reduced, so as to have the vessel under complete command, and she should be rounded to, and a good deep cast with Massey's patent lead obtained, so as to insure that she is not to the north-eastward of the Point, and this should be repeated every half hour, until the light be seen, or it is certain that it is past.

*Making Point
de Monts.*

If the vessel be to the north-eastward of Trinity Bay, soundings will be obtained in less than 60 fathoms, from 4 to 6 miles off shore. Directly off Trinity Bay, there is the same depth 3 miles off shore; whilst, at the same distance off Point de Monts, there is no bottom at 100 fathoms. If the distance to Point de Monts has been run by the reckoning without finding bottom at 70 fathoms, it will be almost certain that the vessel is not to the northward; but still, as the effects of currents cannot be exactly calculated, and reckonings are liable to error, it will be prudent to shape a course well to the southward of the Point, till there remains no doubt of its having been passed.

In making the light on Point de Monts, remember that it is not on the extremity of the Point, but has been placed (as I think, very improperly) $1\frac{1}{2}$ mile to the north-eastward, along the coast towards Trinity Bay.

*Mischiev's
position of the
Lighthouse.*

Point de Monts may be approached as nearly as three-quarters of a mile with safety, but not nearer in a large ship, since there is a ledge of rocks, with only 9 feet at low water, nearly half a mile south-eastward of the extremity of the Point, and south-westward of the lighthouse. There are also one or two patches of rock, with 12 feet of water, to the southward and south-eastward of the lighthouse, but these are not more than a third of a mile off shore at low water.

*Rocks off Point
de Monts.*

The foregoing remarks apply where the object is to make the lighthouse, or light, on Point de Monts, which should always be attempted when there is any chance of success, because it is extremely desirable to obtain a fresh departure before running up the comparatively narrow Estuary. But if the weather be so thick, as to leave no reasonable hope of succeeding, or if the wind be from the southward, a course should be steered more to the southward, so as to pass well clear of the Point.

*Anticosti to
Point de Monts.*

Vessels beating up against westerly winds should stand over to the northward, as soon as they can weather Anticosti, unless the barometer, or other indications, render it probable that the wind will veer to the southward. During the flood tides, make short boards off and on the north coast, to take advantage of it, for it runs strongest in-shore. During the ebb, keep further off the land, for that tide also runs strongest near the shore. The tides, in general, are weak along this coast, and a vessel will always make way to windward in moderate weather.

From the Seven Islands to Point de Monts is, in general, the easiest part of the passage, for the W.N.W. wind, which, in this part, is the most common westerly wind, is off the land, so that a vessel can frequently fetch up to Point de Monts in smooth water, particularly at night, when the wind in fine weather generally veers a point or two to the northward.

She will also have the benefit of the flood tide, whilst the ebb, being turned off by Point de Monts, is scarcely felt.

Trinity Bay.

If it blow fresh, and the flood nearly done on arriving near Point de Monts, there will be no use attempting to beat round it till the next tide, and then only in fine weather. In this case, Trinity Bay, where with westerly winds a pilot will generally be found, is a good anchorage with moderate depth of water, good ground, and plenty of room to get under weigh.

*From Point de
Monts to Bic-
quette Island.*

25. From the south extremity of Point de Monts, the north side of Bicquette Island bears S. 48° W. true, or W.S.W. by compass, 79½ miles; and the south point of the Manicouagon Shoals S. 84° W. by compass, 33 miles; but as this great shoal extends towards English Bay, its S.E. point is only 28 miles distant from Point de Monts.

*Entering the
Estuary.*

We have now arrived at the comparatively narrow Estuary, where the tides and currents are much stronger, and more various in their direction, than in the wider parts previously treated of: and where there are shoals extending on the north side several miles off the shore; hence, a good look out, and constant attention to the soundings, become indispensably necessary at night, or during the fogs which are so prevalent and embarrassing in this navigation.

*Current turned
off-shore by the
large rivers
and Points.*

After taking a departure from Point de Monts, the course to be steered must vary under different circumstances of wind and tide. The downward current is not only turned off to the southward by

Point de Monts, but the Manicouagon and Bersimis Points also *From Point de Monts to Bicquette Island,* produce the same effect, although in a less degree, during the ebb tide; to which must be added the streams out of the large rivers Manicouagon, Outard, and Bersimis. During the flood tide, *with Flood tide,* the streams out of these rivers cease, the general current is checked in the offing, whilst in-shore, within a few miles of the north coast, a stream of flood will be found. (Art. 15.)

A vessel taking her departure from Point de Monts with a *with Ebb tide,* whole ebb tide before her, is therefore very differently circumstanced from one which does the same at the commencement of the flood; and must reckon upon being set over towards the south coast much faster in the former than in the latter case.

I will first give directions for a fair wind, and afterwards for beating winds.

Having made the light on Point de Monts, and being 3 or 4 *with Easterly winds,* miles off it to the southward, with the usual easterly winds, nearly or right up the Estuary, steer W. by S. by compass, until up nearly as high as the Manicouagon Shoals, then keep half a point more to the southward, W.S.W. $\frac{1}{2}$ W. These are safe courses with either ebb or flood, and if the vessel has left Point de Monts at or near the commencement of the ebb tide, will usually bring *and with Ebb,* her into soundings off Metis, where 30 fathoms, over sandy bottom, will be found 3 miles off shore; and 50 fathoms 5 miles off shore, and on the edge of the bank.

If, on the contrary, the vessel has left Point de Monts early on *but with Flood.* the flood, she will probably be further to the northward. I say, probably, because the strength of the current is too uncertain to allow of my saying that she positively will be so. However, the degree of uncertainty, which the irregular rate of current gives rise to, must be met by the use of the lead. If, therefore, the weather be thick, and the land not be seen, round to in time, particularly if you have had the ebb tide against you, and get a cast of the lead, to make sure that you have not been set too near the south coast. If no bottom be found at 60 fathoms, the W.S.W. $\frac{1}{2}$ W. course may be continued, until you are up as high as Metis by the reckoning, then let soundings again be tried for, and if still without finding bottom, haul in gradually to the southward, under easy sail, and with the deep sea lead going, so as to endeavour to strike soundings on the bank off Father Point, which may be accomplished safely, since the bank in that part extends several

From Point de Monts to Bicquette Island. 5 miles off shore. When Father Point bears south, by compass, distant 5 miles, the depth is 30 fathoms, over a bottom of soft clay: and with Barnaby Island on the same bearing, distant 7 miles, the same soundings will be found.

To pass Bicquette Island at night.

If the object be to pass the islands of Bic and Bicquette in the night, or foggy weather, run along the northern edge of the Bank of Soundings, with the lead going, taking particular care not to go to the southward into less than 30 fathoms. When you judge that you are approaching near to Bicquette, having passed Barnaby Island, haul out a little to the northward until you are out of soundings, and then steer W.S.W. $\frac{1}{2}$ W., still heaving the lead, and having the vessel under moderate sail for the purpose of getting bottom, till you are certain that you are well above the north-west reef off Bicquette. If you strike soundings at all, whilst running past this dangerous island, on which many vessels have been wrecked, you must haul off immediately to the northward out of soundings, and then steer as before.

When you are undoubtedly past Bicquette and its reefs, haul in to the southward by degrees, till you get hold of the edge of the bank again, and keep it up to Green Island.

Bicquette Reefs.

Bicquette and its dangerous north-west reef lie very near the northern edge of the Bank of Soundings, and were difficult to pass safely, without a chart containing correct soundings; but now that that want is supplied, it may be safely accomplished with the assistance of Massey's patent sounding machine, by any seaman of common prudence and intelligence. Two miles north of Bicquette there are 30 fathoms: and only $1\frac{1}{2}$ mile north of the N.W. reef there is the same depth, with sandy bottom. Further off no bottom will be found at 50 or 60 fathoms. Both the island and reef are very bold to the northward, having 12 fathoms close to them.

Bic Island inner passage.

I do not recommend vessels, without a pilot, to attempt running inside of the Island of Bic in foggy weather, unless very well acquainted. If, however, it be necessary to do so, for the purpose of anchoring, see directions for that island.

Deviation of the Compass must be considered.

It must be remembered, that the courses which I have recommended are independent of the *deviation*, or local attraction; and also, that its effect, although varying in amount in different vessels, is always to make it appear that they are steering less to the southward than they are in reality, if the compass be, as

usual in the after part of the ship, and if there be no large masses of iron, as an iron tiller for instance, still further aft: for, in this latter case, the attraction of all the rest of the iron in the vessel may be neutralized or overcome by that of the iron abaft and close to the compass. I believe, however, that it very seldom is so, since the iron tiller and rudder chains in the Guinere produced no such effect. To render the effect of deviation apparent, I will suppose it to amount to a point of the compass, no uncommon occurrence on a 6 or 8 point course, and the ship to be steering W.S.W. $\frac{1}{2}$ W. by the compass in her binnacle. She will then in reality be making a S.W. by W. $\frac{1}{2}$ W. course, which would soon put her on shore on the south coast, an event that would be accelerated by the current, which, instead of stemming, she would have on her starboard bow checking her in-shore.

A case exactly similar to the one I have supposed, occurred on the night of the 8th September, 1831, when the ship *Jane*, of Belfast, having several large chain cables, and other extra iron on board, by which the deviation must have been greatly increased, ran stem on to Bicquette, with a fair wind, but thick fog. She was steering the regular course up the middle of the Estuary; but her master was quite unaware of the effect of the great mass of iron in her hold upon her compasses, and equally so, that previous to the accident which caused the total loss of his vessel, he had been running for many miles in less than 20 fathoms water, the Bank of Soundings not being laid down in his chart.

These remarks, and others which I have made respecting the deviation, will, I trust, show how important a knowledge of it is to the safety of a vessel, and will, moreover, point it out as the duty of every commander, to endeavour to ascertain its amount during the voyage, and before he arrives in a difficult navigation like the St. Lawrence, where the fogs may frequently oblige him to run as high as Green Island without having been able to obtain a pilot.

Pilot schooners are often to be met with off Point de Monts, *Pilots*, and pilot boats frequently wait off Caribou Point, at Trinity Bay, near the lighthouse on Point de Monts, and in St. Augustin Cove. If, however, a pilot should not have been obtained, and it be in the day time, you may safely stand in under easy sail and

*From Point de
Monts to Bic-
quette Island.*

*Fatal conse-
quence of
neglecting the
deviation.*

Pilots.

with the lead going, and endeavour to make the houses on Father Point, although the weather be thick; running along the land from the eastward for that purpose, and going no nearer than 10 or 11 fathoms, at low water. Many pilots live there, and there is almost always one to be obtained.

Father Point.

Even in a foggy night you may form a tolerably correct opinion whether you are up to Father Point, or not; for an inspection of the chart will show, that the soundings shoal more gradually into the southward there than they do further to the eastward. If you heave to, in 10 or 11 fathoms, low water, with the ship's head off shore, a gun or two will be sure to bring off a pilot, unless the weather be very bad, and the pilots are fearless and excellent boatmen.

*From Point de
Monts up the
river, with
Southerly
wind.*

26. I have hitherto been speaking of the case when vessels are running up with easterly winds and thick weather; but a second case is when the wind is from the southward, then the direct course, W. by S. $\frac{1}{2}$ S., may be steered, if the vessel be, as before, close off Point de Monts, or W. by S. if she be nearer the south coast: allowing still for the set of the current to the southward, according to the tide, and sounding in time if the land be not in sight. Whenever the weather is foggy, and the land cannot be seen, the object should always be to strike the Bank of Soundings along the south coast about Metis, or Father Point at farthest, and then follow it as a guide to the westward.

*with Northerly
wind.*

A third case, of frequent occurrence in the autumn, is when there is a fresh northerly wind. The weather is then invariably clear, and, as the land can be seen, there is no danger of getting on shore with a good look out; but the strength of the current to the southward is increased by this wind, and therefore the vessel must be kept well to the northward, to prevent being set over to the lee-shore, and being, in consequence, obliged to tack (upon the wind veering a point or two to the westward) and stand all the way back again.

Supposing the ship to be in the same position as before, 3 or 4 miles to the southward of Point de Monts, you may fearlessly steer west for the first 20 miles, or as long as you can see the light. Take the bearing of the light ever half hour, and lay it down on the chart, in order that you may perceive the effect of the current; and if you thus find that it sets you very fast to the southward, as you probably will, particularly during the ebb tide,

haul up still higher, but take care not to bring the light to bear to the eastward of E. by N., lest you get too near the Manicouagon Shoals. When you reckon yourself up to the Manicouagon Shoals luff up in the wind, and get a deep cast of the lead, for although those Shoals are very steep on their east side, and also to the westward of Manicouagon Point, yet there are soundings off their south point. When the Manicouagon Point bears north by compass, you will have from 50 to 60 fathoms, at the distance of $5\frac{1}{2}$ miles off shore, and from 30 to 40 fathoms when you are 4 miles off shore, the bottom being of very fine sand. In the first case, you will be $3\frac{1}{2}$ miles off the south point of the shoals, and in the latter case, only $1\frac{1}{2}$ miles.

*From Point de
Monts up the
river with
Northerly
wind.
Manicouagon
Shoals.*

When past these dangerous and extensive shoals, the south point of which extends $2\frac{1}{2}$ miles off a low point of the same name, which can seldom be clearly distinguished at night, in consequence of the higher land behind it; you may haul well up under the north shore, coming no nearer than 3 miles, and taking care to avoid the shoal off Bersimis Point, which extends nearly $1\frac{1}{2}$ miles off a low point, also difficult to be seen at night.

There is also a rocky shoal, first discovered by us, and named the Gulnare Shoal. Gulnare Shoal, which lies nearly 2 miles off Cape Colombier. And, lastly, give a good berth to the low Point Mille-Vaches, off which the shoals extend 2 miles, as will be seen by the chart. All these shoals are extremely steep, and there is, in consequence, no trusting to the lead in approaching them with a vessel going fast.

*Mille-Vaches
Shoal.*

After passing Point Mille-Vaches, the north coast is bold, and without anchorage, all the way to within 3 miles of the Saguenay River.

Although I have said that the strength of the current down the Estuary of the St. Lawrence is uncertain, yet it may be useful to give an idea of its rate and effect, as experienced on two occasions.

*Instances of the
effects of the
South-easterly
Current.*

First, when running up from close off Point de Monts, which we left at the commencement of ebb tide, with a strong breeze from the northward, we found that we were retarded by a stream of 2 miles per hour, and that the set to the southward, at right angles to our course, was at the same time 11 miles in 7 hours, the wind being free and the rate of sailing 8 knots. This occurred in the month of October.

The second refers to an effect of the tidal stream, which is more

Instance of the local, and higher up the Estuary, but of which it is most important effects of the South-easterly Current and Ebb Tide. to the safety of a vessel to be aware.

We had been becalmed 5 or 6 miles south of Bersimis Point, when a breeze sprang up from the eastward, at 10 h. 30 m. P.M. Although we steered W.S.W., and S.W. by W. $\frac{1}{2}$ W., yet at 4 A.M. we saw Bicquette bearing south 2 or 3 miles, and were obliged to haul up to clear the N.W. reef. Had this occurred in a vessel where the lead was neglected, and had the weather chanced to be foggy, she would have run on shore, and been in all probability lost. On this occasion, the ebb tide appears to have set diagonally across the Estuary, about E.S.E. by compass, and at the rate of 2 miles per hour; being evidently thrown off to the southward by Point Mille-Vaches and its shoal. During the flood tide, however, it must be remembered, that no such stream will be found; on the contrary, I have reason to believe, that the remark of Mr. Lambly (the experienced harbour-master of Quebec) will then prove correct, that "the current between Bicquette and Point Mille-Vaches sets to the N.E., instead of E.S.E.," for the eddy flood (art. 14) meets the proper flood flowing up along the Bank of Soundings, and between Bicquette and Bic, and the united streams are turned off to the northward after the first quarter flood, as we have ourselves observed.

From Bicquette Island to Green Island Light-house.

Green Island Lighthouse.

27. From the north side of Bicquette Island, the lighthouse on Green Island, which shows a fixed light, bears S. 44° W. true, or S.W. by W. $\frac{1}{2}$ W. by compass, distant $30\frac{1}{2}$ miles; and the light can be seen, in clear weather, from a distance of 17 or 18 miles, if the observer be elevated 60 feet above the sea. The lighthouse stands on the north side of the island, and when first seen, from a vessel on the south Bank of Sounding, appears like a white sail a short distance from the shore.

Tides above the Razade Islets.

In running up to Green Island, after passing the N.W. reef of Bicquette, a W.S.W. course, by compass, will, in general, take a vessel along the edge of the bank, up as high as the Razades; but above those islets both flood and ebb set to the S.E., and render it necessary to steer more to the westward, or even to the northward of west with a scant northerly wind. But the lead, and a reference to the soundings in the chart, are the only sure guides. With an easterly wind the fog will seldom be so thick as to prevent either the Razades, Basque, or Apple Islands from being seen in the day-time. They may be safely

approached by the lead, and I recommend the attempt to make the two last, especially Apple Island, which is very bold on the north side, in order that the position of the vessel may be exactly ascertained before hauling out into deep water, for the purpose of clearing the dangerous Green Island Reef. In the circumstances which I am supposing, of an easterly wind with fog in the day-time, it is much more safe to attempt to make Apple Island than the lighthouse, since a vessel can approach within less than two cables of the former, but would be ashore before she saw the latter, if the fog were thick, since the reef extends nearly $1\frac{1}{2}$ miles to the north-eastward of it.

*From Bicquette
to Green Island
Lighthouse.*

Apple Island.

Having succeeded in making Apple Island, the vessel may be sheered out to the edge of the Bank of Soundings; and as the distance is short, it is easy to judge when the vessel is coming near the reef, taking, of course, the tide into account, whether it be flood or ebb, and keeping the lead constantly going. Then, if the lighthouse be not seen, sheer out to the northward into more than 30 fathoms water, and shape a course up towards the Brandy Pots, according to the tide, as will be directed in Part the Second of these Directions.

If the lighthouse be seen, or the light at night, there is still less difficulty in avoiding the reef, and regulating the course afterwards, provided the chart be consulted, the lead used, and the tide considered.

But Green Island Reef is extremely dangerous, and is rendered doubly so, by the strong tides which set upon it, and which produce breaking ripples, that try the nerves of strangers during a dark night, or foggy weather. Therefore, in a strong easterly gale, dark night, fog, or snow so thick that there is little chance of seeing the light, I consider the attempt to run through between Red and Green Islands to be attended with great risk, especially during the ebb tide, which, coming from between Hare Island Reef and Red Islet, sets over towards the Green Island Reef, at the rate of 5 knots. It requires an experienced pilot to take a ship safely through this dangerous passage under these circumstances: I should, therefore, recommend, in the case of a vessel approaching Bic, in such weather, towards the close of the day, and without a pilot, rather to heave to, or stand on and off the south bank, than run this risk, although there may be some danger in so doing from other vessels running up. If the sound-

*Green Island
Reef.*

*Danger of passing
between
Red and Green
Islands, especially
on the
Ebb.*

*Better to remain
off Bic
Island.*

From Bicquette to Green Island.

ings about Bic be well known, or that island, or Bicquette, has been seen, the safest plan would be to run under the lee, and anchor to the westward of them, in from 8 to 10 fathoms low water (according to the directions for Bic and Bicquette), where the holding ground is excellent, and the vessel would ride in perfect safety till daylight. Even as far as 6 or 7 miles to the westward of these islands, in from 12 to 13 fathoms at low water, I have rode out a very heavy breeze from the eastward; the sea, although considerable, being nothing in comparison with that which was running, at the same time, in the deep water outside of us and off the bank.

Anchorage West of Bic Island.

Beating to the Westward from Point de Monts. 28. In beating up from Point de Monts to Green Island, against westerly winds, which are almost always accompanied with clear weather, there is little difficulty, with the assistance of the Admiralty charts, other than that which arises from the set of the tides and currents.

It requires a tolerably good sailing vessel, and a flood tide, to beat past Point de Monts against a wind right out; but short boards round the Point, and along the north coast, up to Cape St. Nicholas, will most readily succeed. It is not, however, advisable to keep this shore close on board much further to the westward, lest the wind should fall to a calm, for there is a strong indraught towards the mouth of Manicouagon River, during the flood tide; and if an easterly wind should chance to spring up, after the vessel had been drifted in near the mouth of English Bay, it might be difficult to beat out, or to weather the eastern side of the Manicouagon Shoals. The light on Point de Monts cannot be seen on any bearing to the southward of east, being intercepted by the high land to the westward of it; and when it disappears, a vessel off Goodbout River will be only 1 mile from the Bar, or off Cape St. Nicholas little more than 2 miles off shore: so that it is a safe rule, in standing in towards the coast at night, to tack as soon as the light bears E. $\frac{1}{2}$ N.

When the ebb makes, stretch over to the southward into the middle of the Estuary, where that tide is less strong than near either shore; but do not go further to the southward, and be back again to the north coast at the return of flood.

The best time to get past Point de Monts, when fine weather and westerly winds prevail, is at night, or in the first hours of the morning, for then vessels are often assisted by a northerly

land wind. If it has blown freshly from the westward during the preceding day a heavy head sea may be expected off the pitch of the Point; the flood from along the land in the direction of the Seven Islands meeting the downward current off the Point assists in causing this.

Boating to the Westward from Point de Monte.

If, after passing Point de Monte in the morning, with a northerly land wind, there are signs of its dying away, or veering to the westward as the day advances, continue the board to the southward and westward, instead of tacking to keep the north land on board, as directed when the wind is settled right down; for the land wind of the night will be probably succeeded by the fine weather day wind, which usually becomes a steady breeze about 9 A. M., after commencing at W.S.W., and thus affords an advantageous board towards the north coast.

In the fine weather of the summer the wind will probably veer by degrees during the day back to west and W.N.W., thus offering another good board to the south-westward. Pilots and others, who are experienced in reading the indications of the winds and weather, frequently gain more ground to the westward by calculating upon these probable changes of the wind, than by keeping on the north shore out of the current.

With the exception of the low Points of Manicouagon, Bersimis, and Mille-Vaches, of which I have already warned the seaman (art. 26), the land can in general be plainly seen at night during the continuance of westerly winds; and where its features are sufficiently remarkable, there will be little difficulty in making it out, from its representation in the Admiralty charts. Mount Camille, especially, being an isolated mountain, 2036 feet above high water mark, can easily be distinguished; as well as the summit of the high land of Bic, 1234 feet high. Their bearings will often be of great service to vessels in clear nights, and will show when they are high enough up to fetch Father Point; where a pilot should be sought for, if one has not been already obtained.

High Land of Bic.

Pilots at Father Point.

On arriving off Father Point, or any where between it and Bic, if the flood be done, and the wind be light, it will be better to anchor on the Bank of Soundings, weighing again, if there be a breeze, in sufficient time to stand over and meet the first of the flood on the north shore. By this mode of proceeding, vessels will gain much more ground to the westward than by remaining

Anchorage off Father Point.

*Beating to the
Westward
above Point de
Monts,*

on the south shore, for although there be a weak stream of flood upon the Bank of Soundings, from Father Point to the Island of Bic, yet there is little above that island, and none after the first quarter flood, excepting so close in shore as to be useless to large vessels.

*between
Mille-Vaches
and Saguenay
River,*

From the Bay of Mille-Vaches to within 3 miles of the entrance of the Saguenay River, with the exception of a shoal extending a short distance off shore from the bay next westward of Cape Bondesir, as will be seen in the chart, the coast is moderately high and very bold, the flood strong, and the ebb comparatively weak. Vessels should, therefore, make short boards along this shore until up to Bergeron cove, and then stretch over to the anchorage under Green Island Reef, to wait for the next flood; for it will require a whole tide, even with a good working breeze, and a fair sailing merchant vessel, to beat through between Green Island and Red Islet, and reach good anchorage above, before the ebb makes.

*near Red
Islet Reef.*

*Beacon for
this reef.*

In standing across from the north shore, beware of the Red Islet Reef, which extends $2\frac{1}{2}$ miles to the eastward, from the low shingle islet of the same name. There is a beacon above and behind the lighthouse on Green Island, which has been erected at the recommendation of Mr. Lambly, the harbour-master, to lead vessels clear of this danger, and it answers the purpose extremely well. It is white, like the lighthouse, but much smaller; and when they are in one bearing, S.S.E. $\frac{1}{4}$ E., by compass, the beacon appears in the middle of a lane cut through woods behind it. A vessel standing over with this leading mark on, will pass over the tail of the Red Islet Reef, in from 5 to 8 fathoms, according to the time of tide. This beacon will be readily distinguished in the day time, but if a stranger should have any doubt of it, let him be sure not to bring the Green Island lighthouse, or light at night, to bear at all to the eastward of S.S.E., and he will be in no danger. Crossing, below the reef, with the light upon that bearing, there will be found from 9 to 12 fathoms, according to the time of tide, at a mile distance from the reef.

*Ripples near
Red Islet.*

Violent breaking and whirling rippings of the tide, which can be heard at a great distance in a still night, will be met with in crossing, and are alarming enough to strangers, but there is no danger with the lead going, and an anchor clear to let go in the event of its suddenly falling calm near the reef.

The Red Islet Reef is, however, very dangerous, and the first *Beating to the Westward above Point de Monts.* of the flood sets strongly over it, in a direction from Bergeron coves towards Green Island. The ebb out of the Saguenay also *Tides set over Red-Islet Reef.* sets upon it, so that a stranger should not make too free with it. If a vessel cannot fetch the anchorage under Green Island Reef, she may anchor anywhere, in fine weather, along the south bank between Bic and Green Island, and will have good ground in *Anchorage between Bic and Green Island.* 12 fathoms, at low water, and plenty of room to get under weigh.

In coming up with a N.W. wind, the north shore should be *Passages N. and S. of Red Islet.* kept close on board until up to Bergeron, and if it be flood tide the vessel may pass either northward or southward of Red Islet, as may be preferred; but the former passage should not be attempted with this wind during the ebb, nor yet the other, except by those who are well acquainted with the set of the tides.

Although the passage to the northward of Red-Islet is the *Northern passage, risk in attempting.* quickest, there being a much stronger stream of flood in that channel, yet I do not by any means recommend it: on the contrary, I think it should never be attempted unless the breeze appears certain to continue, for if it fell calm, the vessel would run great risk of being drawn in by the stream of flood among the dangerous shoals off the mouth of the Saguenay, or being set down upon Red-Islet Reef when the rapid ebb made out of that river, which is so strong, and the water so deep, that no anchor would hold.

To pass to the southward of Red-Islet with the same wind, *Southern passage.* haul round the east end of the reef, and as close to the southward of it as is prudent, coming no nearer than 20 fathoms until past the islet. To those who are well acquainted both with the soundings and set of the tides, it may be desirable to keep closer in attempting the passage with an ebb tide, but I cannot recommend it to strangers.

More full directions for this part of the river will be given at the commencement of Part the Second, which will begin at Green Island.

29. For the return voyage, down the Estuary and Gulf, little *Returning down the Estuary.* or no instruction seems necessary, as long as the wind remains fair and the weather clear, beyond what may be gathered from the Admiralty charts and the preceding remarks. But where vessels are met by easterly winds and thick weather anywhere above Point de Monts, great caution, attention to the soundings

*Returning
down the
Estuary.*

and set of the tides and currents, become necessary to ensure safety, particularly during the long nights and wild weather in the fall of the year.

*Wait for fair
wind at the
Brandy Pots,*

Vessels beating down the St. Lawrence usually stop at the Brandy Pots for a fair wind. But supposing, after they have passed Green Island, that the fair wind fails, and they are met with an easterly wind before they have arrived near the island of Bic, I should recommend them, in that case, to run up again to the Brandy Pots, especially if late, or very early in the navigable season; for all that they will gain by beating about in thick weather, probably for several days and nights in succession; will not be worth the risk. But if they have reached far enough down at the commencement of the adverse wind, the island of Bic affords good shelter and anchorage, which should be sought in time, before the fog commences. (See directions for Bic.)

*or anchor under
Bic Island.*

*No other an-
chorage except
Gaspé and the
Seven Islands.*

There is no other anchorage which I can recommend lower down nearer than the Seven Islands, and after that Gaspé. There are other places, which will be mentioned hereafter, in some of which vessels ride for taking in timber, but there they are moored close in shore, with lower yards and topmasts struck, by which means they ride out very bad weather, with very indifferent shelter; but such places are not fit for occasional anchorages, or for a heavy laden ship to run for on an emergency.

*Beating down
along South
shore.*

In a vessel beating down, the south bank should be the guide in thick weather, or at night. She should tack from it, after striking soundings on its edge, and should not stand to the northward more than half-channel over in any part: thus keeping in the strength of the downward current, and avoiding the possibility of accident from the shoals of the north coast, which being very steep, and affording little or no warning by the lead, have proved fatal to many vessels under these circumstances.

*Smooth water
on South shore
Bank of Sound-
ings.*

It will be almost always seen when the vessel comes upon the south Bank of Soundings, by there being so much less sea there than in the deep water, and strength of the weather current, outside: a strong ripple will be observed at the edge of the bank during the flood tide.

*Effect of either
Tide in stand-
ing off.*

In the board from near Bicquette, during the flood tide, the vessel will go to the northward rather faster than to the southward back again, whilst in the ebb, the contrary will be the case. But above the Razade Islets, she will go much faster to the

southward than to the northward, in both tides. Lower down the Estuary, and as far down as Cape St. Anne, she will generally go faster to the southward than to the northward during the ebb tide: whilst in the flood, an indraught into the rivers will be felt on approaching near the north coast from Bersimis Point, nearly down to Cape St. Nicholas. The least reflection upon what has been said of the set of the tides and currents (arts. 15 and 16) will account for these effects.

Returning down the Estuary.

In a vessel beating down in a dark night, or thick weather, there is no safety unless the lead be kept constantly going: when she is approaching the south coast, in the board to the southward, sail should be sufficiently reduced for soundings to be easily obtained, and everything in readiness to tack, or veer, at the shortest notice. These precautions become the more necessary as the vessel descends the Estuary, and the Bank of Soundings becomes narrower. Off Matan there are 30 fathoms, sandy bottom, $1\frac{1}{2}$ miles off shore; and 60 fathoms, at 3 miles off: whilst, at the distance of 5 miles from the land, no bottom will be found at 100 fathoms. The south bank becomes narrower still to the eastward of Matan, and ceases, in consequence, to be of use to vessels. Off Cape Chatte there are 30 fathoms of water, little more than half a mile from the shore; a short distance further off there are no soundings at 70 fathoms; and between it and Point de Monts, from 150 to 170 fathoms, blue mud bottom.

Constant use of the LEAD indispensable,

especially where the Bank narrows.

Below Point de Monts, there is plenty of sea-room, and although the lead will there be of little use, yet the south coast is so high and bold that it may generally be seen, if the fog be no thicker than is usual with a regular easterly wind up the St. Lawrence.

Lower down still, with a beating wind and thick weather, soundings may be struck off the west end of Anticosti, or between the west and S.W. points of that island, if it be wished to ascertain how far the vessel is over to the northward before night. Eastward of the S.W. point of Anticosti, to Pavilion River, the Bank of Soundings off the south side of the island is very narrow; but from the latter to the east point, there is plenty of warning by the deep sea lead, as will be seen by the soundings in the chart.

Soundings off Anticosti.

I do not recommend the channel to the northward of Anticosti, in the voyage down the St. Lawrence, because there is not only

*Returning
across the
Gulf.*

*Belle Isle
Strait.
Icebergs.*

less room, but also less current in favour. Neither do I recommend the route by the Strait of Belle Isle, on account of the straggling icebergs, which are in general to be met with there through all the navigable season. Towards the fall of the year, however, vessels occasionally pass through it, in anticipation of the northerly winds which prevail at that season in the Atlantic: they should be well acquainted with the currents, and should know the anchorages on the north side of the Strait. Instructions for making this passage will be given in a future Chapter.

I have purposely not interrupted the foregoing general directions, by particular descriptions of the coasts, or places, alluded to. The latter, together with directions for the harbours, anchorages, and dangers, will be found in the following Chapters.

CHAPTER IV.

THE ISLANDS IN THE GULF OF ST. LAWRENCE.

30. Island of St. Paul.—31. Bird Rocks.—32. Bryon Island.—33. Deadman Islet.—34. Magdalen Islands, general Description.—35. Description of the Southern side of the Magdalens, and the Anchoring Places and Reefs, with Directions.—36. Description of the Northern side of the Magdalens, and the Dangers, with Directions.—37. Tides and Currents around the Magdalens.—38. The Island of Anticosti, general Description, Provision Posts, and Lighthouses.—39. Description of the Southern Coast of Anticosti, with Directions.—40. Description of the Northern Coast of Anticosti, with Directions.—41. Remarks upon the Currents and Tides around Anticosti.

ISLAND OF ST. PAUL.

30. THE ISLAND OF ST. PAUL is composed of primary rocks, principally mica slate; dipping at an angle of not less than 45° to the southward. Its appearance and shape will be better shown by the views and the chart, than by any written description. It is partially wooded with dwarf and scrubby spruce trees, useless, excepting for fuel. The only inhabitants are two men in charge of a depôt of provisions for the relief of shipwrecked persons, supported by the government of New Brunswick. These men reside on the north point of Trinity Cove, where there is a dwelling-house and store. They grow a few potatoes, and shoot ducks during the winter, and also in the spring and autumn. A very few foxes are the only wild animals upon the island: there is no feathered game, or anything else to support life. The ocean however compensates for the deficiencies of the land. Codfish and halibut are often plentiful around the island, and mackerel and herrings may be taken at times, in their seasons.

St. Paul Island is $2\frac{2}{3}$ miles long, by 1 mile broad. Its N.E. point is a small detached islet, although it does not appear as such from the sea. This islet is separated, by a very narrow channel, from a peninsula, between 3 and 400 feet high, which, together with the isthmus, is so precipitous as to be nearly inaccessible. The remaining greater part of the island, which is also very steep and precipitous towards the sea, has two parallel

*Description of
St. Paul.**Water.**Anchorage.*

ranges of hills, that on the Atlantic coast being the highest, and attaining an elevation of about 450 feet. A valley runs through between these hills, having 2 small lakes or ponds, 2 or 300 feet above the sea. These supply the principal stream on the island, which is about a fathom wide, of yellowish-brown water, well tasted and wholesome, and descending into the sea in the southern part of Trinity Cove. There are several other, but much smaller, runs of water, one of which is into Atlantic Cove. These two Coves are nearly a mile from the S.W. extremity of the island, the first being on the Gulf side, and the other on that which is towards the Atlantic, as its name implies. They afford the only shelter for boats, and the only good landing on the island, which is easier of ascent from them than at any other part. Off the two coves just mentioned, small fishing schooners anchor, with the wind off shore, in 10 or 12 fathoms, sand and gravel bottom, and at the distance of 2 cables' length from the rocks. In very fine weather, large vessels might venture to ride with a stream anchor, in from 25 to 30 fathoms about half a mile off shore, but should be in constant readiness to weigh, at the first sign of a change in the wind or weather. Further off shore the water becomes extremely deep, as will be seen in the chart, so that there is little or no warning by the lead in approaching this island in foggy weather. On this account, although so bold and high, it is extremely dangerous, and many shipwrecks have taken place upon its shores, attended with a most melancholy sacrifice of human life. In few parts of the world would a lighthouse have prevented a greater loss of property or a greater amount of misery, and it gives us, therefore, infinite satisfaction to announce, that the Commission recently appointed to determine on the most generally useful position for it, has already made their report to Her Majesty's Government.

The irregularity of the tidal streams and currents add much to the danger arising from the fogs, which prevail in southerly, easterly, and often also with S.W. winds. During the whole of a fine calm day, at the end of June, we observed the current to set to the S.E., at the rate of 1 knot, past the north point of the island.

BIRD ROCKS.

*Description of
the Bird Rocks.*

31. THE BIRD ROCKS are of coarse red sandstone, or conglomerate, in strata dipping very slightly to the S.W., and are

constantly diminishing in size from the action of the sea. They present perpendicular cliffs on every side; yet it is possible to ascend them, with great difficulty, in one or two places, but there is no landing upon them excepting in the calmest sea. Every ledge and fissure of the cliffs is occupied by gannets, and the summits of both rocks are literally covered with them. The white plumage of these birds gives these rocks the appearance of being capped with snow, and renders them visible, through a night glass, in a clear and moonlight night, from the distance of 7 or 8 miles.

*Description of
the Bird Rocks.*

The two Rocks bear from each other N.N.W. $\frac{1}{2}$ W. and S.S.E. $\frac{1}{2}$ E., and are 700 fathoms apart. Sunken rocks leave only a boat passage between them. The south-easternmost is the largest and highest, though scarcely 200 fathoms long, and not more than 140 feet high above the sea. The other is divided into two precipitous mounds joined together by a low ledge. The lesser of these mounds resembles a tower. A reef extends 700 fathoms to the eastward, from the Little, or N.W. Bird Rock, and there is a patch of breakers nearly midway between the two, and rather to the S.W. of a line drawn from one to the other. The Great, or S.E. Bird Rock, is quite bold, excepting in the direction of the other Rock. The Little, or N.W. Bird Rock, bears N.E. by E. $\frac{1}{2}$ E., distant $16\frac{1}{2}$ miles from the east point of the Magdalens, and E. $\frac{1}{2}$ S. $10\frac{1}{2}$ miles from the east end of Bryon Island.

The soundings off the Bird Rocks, to the eastward, have been already stated (art. 20); they extend still further off to the northward, so as to afford the most ample warning and assistance to vessels at night, or in foggy weather, as will be seen in the chart. Between them and the east point of the Magdalens, the depth nowhere exceeds 16 or 17 fathoms, over a bottom of reddish sand, and sea-eggs are very frequently brought up by the lead.

Bank of Soundings.

Between the Birds and Bryon Island, there is a ridge of rocky and foul ground, on some parts of which, it has been said, there is as little as 4 fathoms of water, because bottom has been seen in calm weather. We, however, could not find less than 7 fathoms, but it may nevertheless exist, so that a large ship had better not cross this ridge when there is much sea running. The two cliffy points on the north side of Bryon Island, in one, mark the northern limits of this rocky ground.

*Foul Ground
between the
Birds and
Bryon Island.*

BRYON ISLAND.

*Description of
Bryon Island.*

32. BRYON ISLAND, which is uninhabited, is rather more than 4 miles long, in a W. by N. and E. by S. direction, with the extreme breadth of rather more than a mile. Its eastern end bears from the east point of the Magdalens, N. by E. $\frac{1}{2}$ E. $10\frac{1}{2}$ miles, but its S.W. point approaches to within $8\frac{1}{4}$ miles of the north cape of these islands.

Bryon Island is formed of alternating and nearly horizontal strata of red sandstone, red ochreous clay, and shaley grey sandstone. These rocks are soft and friable, forming perpendicular or overhanging cliffs nearly all round the island, which are broken in holes and caverns, showing how fast they are giving way to the action of the waves.

Water.

The soil is similar to that of the Magdalens. A great part of the island is wooded with dwarf spruce trees, and there is a large upland tract covered with good native grass. Water is neither plentiful nor easy to be obtained, but it may be had in small quantities by digging, and there is a spring on the north side of the narrow isthmus which joins the eastern peninsula to the remainder of the island.

Reefs.

I had no opportunity of measuring the height of Bryon Island, but I conceive it nowhere exceeds 200 feet above the sea. The cliffs on the north side are much higher than those on the south, where there are several small coves in which boats may land easily with the wind off shore. There are three reefs off Bryon Island. One off its east end extends near three-quarters of a mile to the north-eastward: another off the west end extends $1\frac{1}{2}$ miles to the westward, and the third, off the sandy S.W. point, $1\frac{1}{4}$ miles to the southward. No marks can be given for clearing these reefs, but the bearings of the land, as shown in the chart, will afford sufficient guidance to the seaman. The reef off the S.W. point is so much in the way of vessels passing between it and the Magdalens, that it may be useful to add, that from the southern ridge of this reef, Bryon Island subtends an angle of 97° , so that with the island subtending any less angle the reef may be passed. The south reef assists greatly in turning off the sea from the roadstead to the eastward of it, where vessels may safely anchor in 6 fathoms water and a sandy bottom, at the distance of a mile or more from the shore, and with all winds from N.E. round by

north to W.N.W. Small vessels in heavy N.W. gales lie at anchor close under the reef. *Description of Bryon Island.*

There are regular soundings, from 9 to 11 fathoms, with sandy bottom, between Bryon Island and the Magdalens, with the exception of an extensive patch of foul and rocky ground, lying between S.W. $\frac{1}{2}$ W. and W.S.W. from the west end of Bryon Island, and having a clear channel on either side of it, as will be seen in the chart. We could find no less than 5 fathoms here, and although the fishermen see bottom upon it in calm weather, I have every reason to think that there is no less water. Nevertheless, large ships had better not run over it, when there is a heavy sea running, for a small point of rock, with a few feet less water, might escape the most rigorous examination. *Adjacent Soundings. Foul Ground.*

These rocky places are called fishing grounds by the inhabitants of the Magdalens, because codfish abound upon them. There is one with 11 fathoms of water, $2\frac{1}{2}$ miles north of Bryon Island, and which extends a considerable distance parallel to the island. There is sandy bottom, and a greater depth of water within this ridge, and vessels may anchor, in fine weather and southerly winds, off the bay on the north side of the island. The soundings extend so far off Bryon Island to seaward in every direction, that there is no possibility of a vessel on a voyage being endangered by it, if the lead be used. But great caution is requisite in approaching the reefs, for they are very steep, especially that which extends to the southward. *Rocky fishing grounds. The Reefs are very steep.*

DEADMAN ISLET.

33. THE DEADMAN bears N. 52° W., $7\frac{3}{4}$ miles nearly, from the west cape of the Magdalens; and is very small, being not more than 300 fathoms long, in an E.S.E. direction, and less than half that in breadth. It is about 170 feet high, with steeply sloping sides, meeting at the summit like a prism, so that when seen end on, it resembles a pyramid. When seen from a distance with its longest sides presented to view, its outline very much resembles that of a body laid out for burial, from which circumstance its name is derived. It is composed principally of trap rocks, and when seen close to, on a bright sunny day, with the white surf dashing against its variously coloured sides, it is a very beautiful object. It is so bold on the west side, that a vessel *Description of Deadman Islet.*

Deadman Islet. may pass within a couple of cables' length with perfect safety, but a reef extends towards Amherst Island one-third of a mile.

Reef.

Rocky fishing grounds.

About a mile to the northward of it there is a rocky fishing ground with 8 fathoms least water; and 6 miles S.S.W. $\frac{1}{2}$ W. of it, there is another with 11 fathoms. There is no danger nearer than the "White Horses," to be mentioned hereafter, and vessels may safely pass between it and Amherst Island. It is, however, much in the way of vessels passing round the west end of the Magdalens, and they should beware of it at night, or in foggy weather, for the lead will give little warning, since there is nearly as much water within half a mile of it, as at the distance of several miles.

THE MAGDALEN ISLANDS.

Description of the Magdalen Islands.

34. THE MAGDALENS are a chain of islands, assuming an irregular curved direction, the greatest length of which, from the S.W. cape of Amherst Island to the east point, is 35 miles; but if the smaller isles be included, as they evidently form a part of the Magdalen group, the whole length of the range, from the Deadman to the Great Bird Rock, will be 56 miles, in an E.N.E. direction.

The central parts of these islands rise into hills, with rounded and frequently dome-shaped summits, attaining an elevation above the sea varying from 200 to 580 feet, and which are in general of igneous, or trap rocks. Around, and on the flanks of these hills, are stratified deposits of sandstones and ochreous clays, with gypsum, in the hollows and basins, and also occasionally in veins. No rock-salt has been found upon the islands, but the water of many springs and small streams is sufficiently saline to be nearly unfit for use. The gypsum forms an article of commerce, and some valuable ochreous pigments are also found upon the islands, but the principal dependence of the inhabitants is upon the cod-fishery. The herring and seal fisheries are also prosecuted to a limited extent.

Fisheries.

Wood.

Cattle.

The islands are partially wooded, but the trees are small, and mostly spruce, juniper, birch, and Canadian poplar. The unwooded parts produce good grass, and afford pasturage for cattle and sheep; but they are far less abundant than the pigs, which are fed upon the offals of the fish, and make very bad meat in consequence. The general character of the soil is sterile, for

although good vegetable mould may occasionally be met with, yet, on examination, it usually proves to be superficial, being only a few inches in depth, and having beneath it either the rock or siliceous and ferruginous sands. The climate is severe; not quite so cold as at Quebec in winter, but less warm in summer. Rains, and especially fogs, are extremely frequent, and without this humid atmosphere the islands would be deprived of the little fertility which they possess; the dry and meagre soil requiring copious and continued supplies of moisture.

There are at present upon the islands about 1100 inhabitants, the majority of whom are of French extraction, and who all inhabit Amherst, Grindstone, and Alright Islands, with the exception of about 11 or 12 families divided between Entry Island, Grosse Isle, and East Island, near the N.E. extremity of the chain. Ships may obtain limited supplies of fresh provisions, especially at Entry Island, and water most readily from Amherst Harbour, either from a spring which issues from under the Demoiselle Hill, or from a small stream which falls into Ance à la Cabane, near the S.W. cape of the Island. Wood for fuel becoming scarce near the settlements. Large spars are not to be had, unless when they chance to be saved from wrecks, but small ones, of spruce and juniper, may be obtained. The latter, of which the inhabitants build their fishing-boats and shallops or small schooners, somewhat resembles larch-wood; it is said to be extremely strong and durable.

When first made from sea, the Magdalens appear like several hilly islands, with channels between, but, on a nearer approach, they are seen to be all connected together, with the exception of Entry Island, by a double line of sand-bars and beaches, inclosing extensive lagoons, having very narrow entrances, by which the tide finds access and egress. These sand-bars are in some parts only a few feet above the sea, whilst in others, they rise into hills of blown sand of considerable elevation. They appear to be increasing, since there are generally ridges of sand with from 9 to 12 feet water parallel to, and from 50 to 100 fathoms outside the beach. There are 3 and 4 fathoms of water between these ridges and the shore, a circumstance which has often proved fatal to the crews of vessels wrecked upon these shores. These hilly islands thus disposed in a curvilinear shape, and connected together by sand-bars, inclosing lagoons, reminds

*Description of
the Magdalen
Islands.*

one forcibly of those islands in tropical seas which are connected together by coral reefs.

In a bright sunny day of summer, the cliffs of various colours in which different shades of red predominate, and the yellow of the sand-bars contrasted with the green pastures of the hill sides, the darker green of the spruce trees, and the blue of sea and sky, produce an effect extremely beautiful, and one which distinguishes these islands from anything else in the Gulf of St. Lawrence. In stormy weather, the appearance is equally characteristic. Isolated hills and craggy cliffs are then dimly seen through the rain and mist which accompany an easterly gale, and appear joined by long ranges of breakers, which almost hide the sand-bars. At such times it is dangerous to attempt making the islands, for in approaching the lower parts, the breakers would probably be the first thing seen from a vessel.

*Three harbours
for small craft.*

The Magdalens possess no harbour for ships, but three for small vessels, named Amherst, House, and Grand Entry Harbours, which will be noticed in the following concise description of the shores of the islands and the dangers off them.

East Point.

35. The East Point of the Magdalens is of low sand, inclosing several shallow ponds, and having several sand-hills, some of which are near its extremity, while others, of greater elevation and further to the westward, extend in a chain nearly to the N.E. cape. These last-mentioned sand-hills are inland, and on the margin of the north-eastern part of the great lagoon. The N.E. cape is a hill on East Island, which stands at the head of Grand Entry Harbour. It is a very remarkable cape, and its isolated cliffs, being 230 feet high, can be seen over all the sand-hills and sand-bars, so that when these last are below the horizon, the N.E. cape appears to be the eastern extremity of the chain.

Long-Spit.

LONG-SPIT is a ridge of sand, with from 2 to 3 fathoms water, which extends off the East Point S.E. $\frac{1}{2}$ S. rather more than $1\frac{1}{2}$ mile, and for $1\frac{1}{2}$ mile further in the same direction, the depth is from 4 to 6 fathoms. To clear this spit observe the following remarks and directions. The southern part of Coffin Island is a peninsula, forming the southern shore of the Oyster Pond, and connected to the remainder of the island by a low neck or isthmus at the west end of the pond. Now, the mark for the 3 fathoms extremity of the spit is the north side of this peninsula on with

Clearing Mark, the Old Harry Head. And the south side of the northern

part of Coffin Island, (where the narrow neck joins it, as above-mentioned,) on with the Old Harry Head will lead over the spit in 4 fathoms. A person with our charts before him will have little difficulty in making out these leading marks, but may, if he pleases, pass round the spit, by the lead, in 5 or 6 fathoms, taking care not to bring the Old Harry to bear to the southward of west. To know when a vessel from the eastward has passed it, observe that the line of the summit of the north cape on with the east side of the N.E. cape clears it nearly $\frac{1}{2}$ a mile to the S.W., which mark will also be useful to a vessel approaching it from the westward. The tides set rapidly over this spit, and, *Tides set across the spit.* together with the shoal water, cause a heavy breaking sea. It is extremely dangerous, and vessels should take care not to get becalmed near it without an anchor clear.

DOYLE REEF lies S.E. $\frac{1}{2}$ E., distant $6\frac{1}{2}$ miles from the East *Doyle Reef.* Point, and consists of pointed rocks. It is very small, being only 300 fathoms long, and 50 fathoms wide from 6 fathoms to 6 fathoms. The least water is 3 fathoms on one spot nearly in the centre, and there are 12 and 13 fathoms all round it. The only mark for this reef is the North Cape of the Magdalens, open two-thirds of its breadth to the N.E. of the North-East Cape. On the reef, the angle between these marks and the western point of Coffin Island is $24^{\circ} 27'$.

Lying completely in the way of vessels, and very seldom showing, the sea breaking upon it only in heavy gales, Doyle Reef may justly be considered as one of the worst dangers off the Magdalens. It has been examined and laid down by us for the first time, and was previously known only to a very few persons on the Magdalens. These persons reported that they had at different times seen vessels disappear, which they concluded had struck upon it.

Proceeding to the south-westward from the East Point, the *Old Harry Head.* first headland is the Old Harry, the S.E. point of Coffin Island, bearing from the east point W.S.W., by compass $4\frac{1}{2}$ miles. Between them is a sandy bay, in which vessels may anchor, with good shelter, in all winds from west round by north to N.E.; but it is not a place to be recommended, because a vessel would be there very much embayed by the shoals on either side, and might find it difficult to get out on the occurrence of a sudden shift of wind either at night, or attended with fog.

Columbine Shoals.

The Old Harry Head has red sandstone cliffs of a moderate height, with a reef off it to the south-eastward one-third of a mile.

From the Old Harry $2\frac{1}{2}$ miles S.S.W. $\frac{1}{2}$ W., and S.E. by S., 2 miles from the east end of the cliffs, westward of the entrance of the Oyster Pond, lies the outermost of the COLUMBINE SHOALS, a patch of rocks, with 3 fathoms at low water. Within this, and towards Coffin Island, are numerous small shoal patches and pointed rocks, on some of which there are not more than 3 feet at low water, as will be seen in the chart. These shoals are extremely dangerous, and much in the way of vessels hauling round the east point of the Magdalens with northerly winds. To clear the east side of them, the whole of the high N.E. Cape must be kept well open to the eastward of the Old Harry. There are no good marks for clearing the west side, or for leading clear outside of them, so that the only guide for the latter purpose is not to bring the East Point to bear to the eastward of N.E., and, for the former, is not to bring the west end of Coffin Island to bear to the westward of N.W. $\frac{1}{2}$ N. But although there are no good marks, an angle with a quadrant will answer the purpose as well and as easily. On the outer edge of these shoals, the angle between the Old Harry Head and the left or west extremity of Coffin Island, is 77° ; consequently, with these points subtending any less angle, the vessel will pass outside of the shoals. Coffin Island extends 4 miles to the westward of the Old Harry, having on its south side a lagoon with a very narrow outlet, called the Oyster Pond, and which boats can only enter in fine weather. Off the coast of Coffin Island there are several rocks, besides the Columbine Shoals, but as these are in-shore, and out of the way of vessels, it is sufficient to refer to them, and to remark, that this is a very dangerous part of the islands, which should never be approached at night or in foggy weather.

Grand Entry Harbour.

At the S.W. end of Coffin Island, and between it and the sandbars to the westward, is the entrance of GRAND ENTRY HARBOUR, which has water enough within for large vessels, and is superior, in this respect, to any other in the Magdalens. But its entrance is extremely narrow, not exceeding 50 fathoms in breadth, and the narrow channel leading to it, between sandy shoals which are said to shift, extends $1\frac{1}{2}$ mile to the westward. These circumstances render instructions for entering it of no avail. A native pilot should be employed, or the channel buoyed or staked, and even

then the entrance should not be attempted excepting with a leading wind, flowing tide, and fine weather. The depth that can be carried in, at low water, is 10 feet: at high water, neap tides, 12 feet; and in spring tides, 13 feet. There are 28 feet water at, and immediately within, the entrance. The ebb tide runs out with great rapidity, and the flood in is also strong. There are no settlements at Grand Entry Harbour, but there are a few families in the vicinity of the N.E. Cape who breed cattle, and are of British extraction.

Within this harbour there is a large expanse of water, from 1 to 3 fathoms deep, extending north-eastward to the southern shores of Grosse Isle, and communicating by a very narrow channel with a large shallow pond, which washes the base of the N.E. Cape, and extends to within about 2 miles of the eastern extremity of the chain. This great lagoon also extends south-westward, between a double line of sand-bars, to the eastern shores of Grindstone Island, and is, in all, 23 miles long, and from half a mile to 3 miles wide. Throughout its whole extent there is a communication for boats, at high water, perfectly sheltered from the sea. There are, at present, 3 entrances into this lagoon from the sea, namely, Grand Entry Harbour, already mentioned; another $3\frac{1}{2}$ miles to the westward, which is very shallow; and House Harbour, near its S.W. extremity, between Alright and Grindstone Islands. There were formerly others, which have been closed since the time of Des Barres, 1778: and, on the other hand, the second mentioned above, has opened since his time.

SHAG ISLAND is small and low, and of sandstone, lying about half a mile from the sand-bars, nearly midway between Coffin and Alright Islands, and out of the way of vessels.

CAPE ALRIGHT bears from the Old Harry Head, S. 72° W., $16\frac{1}{2}$ miles. It is the southern point of Alright Island, and a very remarkable headland. The cliffs, of a greyish-white colour, with occasional brick-red low down, are 400 feet high, at the highest part, which is about a mile to the eastward of the cape, and those to the westward of the cape, towards House Harbour, are also very high, and of the same colour.

Nearly a mile inland is the summit of Alright Island, 420 feet above the sea. Between this summit and the cape there is a very remarkable hill, named Bute-Ronde. The south extremity of the cape is low, with a small rock close of it.

Alright Reef. ALRIGHT REEF lies S. 80° E., $3\frac{1}{2}$ miles, from Cape Alright to the outer edge of the reef, which is 400 fathoms long, by 300 fathoms wide. It is of white and pointed rocks having over them 6 feet least water. On this reef the Bute-Ronde is on with the summit of Grindstone Island; the west side of Cape Alright is on with the west side of Cape Meules: and the whole of the woody Wolf Island is just open to the westward of

Marks.

Clearing Mark. Shag Island. Therefore to clear the S.W. side, keep the well-marked summit of Grindstone Island open to the south-westward of Cape Alright; and to clear the south-eastern side of this reef, keep the east side of the woods of Wolf Island (seen over the sand-bars) open to the eastward of Shag Island.

The N.E. point of Entry Island bears S. $\frac{1}{2}$ E., 7 miles, from Cape Alright; and the channel between them leads into Pleasant Bay, passing previously between Alright Reef and the Pearl Reef.

Pearl Reef. The PEARL REEF is small and dangerous, and of white pointed rocks, like most of the reefs round these islands. It is round, and about 200 fathoms in diameter, with 9 feet least water. It bears S. 41° E., $8\frac{1}{2}$ miles from Cape Alright; and N. 80° E., $4\frac{1}{2}$ miles, from the N.E. point of Entry Island. Even with a moderate swell the sea breaks heavily upon it. The marks on this reef are the Demoiselle Hill, open one quarter of a point to the northward of the cliffs of Entry Island, and exactly on with the extremity of the N.W. spit, above water, of the same island. This spit, however, can be seldom seen from the reef. The cross mark is the three high cliffs, on the S.W. side of Alright Island, nearly in one, bearing N. 44° W., when the north-westward of those cliffs will be seen over the middle one, and between it and the south-eastmost. Hence, keeping all those cliffs open will clear the reef to the westward, and the north-westmost cliff completely shut in behind the other two will clear it to the eastward. The Demoiselle Hill shut in behind the north side of Entry Island will clear it to the southward; and, lastly, the Demoiselle kept more than half a point open to the northward of Entry Island will clear it to the northward.

Marks.

Clearing Marks.

To the N.W. of Cape Alright, and distant $2\frac{1}{2}$ miles, is the entrance of HOUSE HARBOUR, a narrow and crooked channel, with only 6 feet at low water.

From Cape Alright, S. 80° W., 5 miles, across the bay in which *Red Cape*, is the entrance of House Harbour, brings us to Red Cape, the southern point of Grindstone Island, and the north Point of Pleasant Bay. The opposite point of the bay, Sandy Hook, is the east point *Sandy Hook*, of Amherst Island, and bears from the Red Cape S. by E. $\frac{1}{2}$ E., 6 miles. From this line to the shore of Amherst Island at the head of the bay, the distance is $4\frac{1}{2}$ miles. Between Red Cape and *Cape Moule*, House Harbour is Cape Moule, of grey sandstone, off which there is a rock, with 5 feet of water; and there is another rock, with 3 feet, off the west side of Alright Island. These will be seen in the chart, and as they lie out of the way of vessels, require no further notice.

GRINDSTONE ISLAND is the second largest of the chain, being, *Grindstone Island*, in this respect, intermediate between Amherst and Alright Islands. Its summit is elevated 550 feet above the sea at high water.

AMHERST ISLAND, the largest and south-westernmost of the Mag- *Amherst Island*, dalens, is connected with Grindstone Island by a double line of sand-bars, inclosing an extensive lagoon, 5 or 6 miles long, and from 1 to 3 miles wide, the southern part of which is called Basque *Basque Harbour*, Harbour. This lagoon is full of sands, which are dry at low water, and has 3 outlets into Pleasant Bay, the southernmost being the deepest, but having only 3 feet water over its bar at low water. The others, including three through the sand-bars of the N.W. coast, will only admit boats at high water, and when the surf is not too high.

The hills in the interior of Amherst Island rise to the height of 550 feet above the sea. Towards the south-east part of the island, and about a mile to the N.W. of Amherst Harbour, is the very remarkable conical hill, named the DEMOISELLE, of trap *Demoiselle Hill*, rock, and 280 feet high. The perpendicular and dark red cliffs of the Demoiselle are washed by the waters of Pleasant Bay.

AMHERST HARBOUR is formed by a peninsula, presenting cliffs *Amherst Harbour*, of grey sandstone to seaward, in the S.W. corner of Pleasant Bay. Its entrance, between this peninsula and the sands to the southward, is $2\frac{1}{4}$ miles within, or to the westward of the extremity of Sandy Hook, which is a long and narrow sandy point with sand-hills. This harbour is the easiest of access and egress of any in the Magdalens, and has, moreover the advantage of an excellent roadstead outside, where vessels may wait their opportunity of running in. Nevertheless, its entrance is extremely narrow and

Amherst Harbour. rather crooked, so that, without a pilot, it would be necessary to buoy or stake the channel. The depth over the bar, which is rocky, is 7 feet at low water, and from 9 to 10 feet at high water, according as it may be neap or spring tides. Within the harbour there are from 12 to 17 feet, over a bottom of soft, black, and fetid mud, well sheltered from every wind.

Pleasant Bay. PLEASANT BAY is the best roadstead in the Magdalens, and the only one where vessels can venture to lie with all winds, during the three finest months of summer, June, July, and August. In those months, a gale of wind from the eastward, so heavy as to endanger a vessel with good anchors and cables, does not occur above once in 3 or 4 years. The riding, however, is often heavy and rough enough in north-east gales, and a vessel should be well moored with a whole cable on each anchor, and open hawse to seaward, and all snug aloft.

The best and most sheltered anchorage is in 4 fathoms, with the rocky point of entrance of Amherst Harbour bearing S.W. $\frac{1}{2}$ W., two-thirds of a mile, and a little more than half a mile from high water mark on the sandy beach to the southward, when a remarkable and high sand-hill will bear S. $\frac{1}{2}$ E. A large ship should anchor further off, and should take notice that there is only from 3 to $3\frac{1}{2}$ fathoms in one part of the bay, as will be seen in the chart. The bottom is everywhere excellent for holding, and of red sandy clay. A vessel anchored as I have recommended, will be sheltered from E.N.E. $\frac{1}{2}$ E. round by the southward and westward to N.E. $\frac{1}{2}$ N., and will, consequently, have only 3 points completely open. Even when the wind comes right in, the sea is much lessened by passing over so much of shoal water; nevertheless, I am of opinion, that the attempt to ride out a heavy easterly gale, either before June, or after August, would be attended with great danger, and do not recommend Pleasant Bay as a pleasant place under such circumstances at any time of the year. In the northern and western parts of the bay, sandy flats extend more than a mile from the beach.

Sandy Hook Channel.

From the Sandy Hook to the N.W. point of Entry Island, the bearing is east, by compass, $2\frac{1}{2}$ miles. There is an extensive flat sandy shoal running out 2 miles from Sandy Hook towards Entry Island, which last has also rocky shoals off its west side. Sandy Hook Channel, between them, is two-thirds of a mile wide, and 4 fathoms can be carried through it by a good pilot, but $3\frac{1}{2}$ fathoms

is the utmost that can be safely reckoned on by a stranger. *Sandy Hook Channel.* There are several rocky patches of $2\frac{1}{2}$ fathoms off the S.W. point of Entry Island, reaching to fully three-quarters of a mile from the shore. The ebb tide sets strongly through this channel, and over Sandy Hook Flat, so that large vessels should go round to the eastward of Entry Island, rather than encounter so many difficulties. To run through Sandy Hook Channel from the sea, keep the east side of Alright Island just open to the westward of the shingle and sandy spit forming the N.W. point of Entry Island, until abreast of the S.W. point of the last-named island, then haul up for the summit of Grindstone Island, looking out for the edge of the sand shoal to the westward, which can generally be seen.

ENTRY ISLAND is the highest of the Magdalens, its summit *Entry Island.* being 580 feet above the sea at high water. Its red cliffs are magnificent and beautiful, rising, at the N.E. point, to 350 feet; and at the south point to 400 feet of perpendicular height. Off the N.E. point there is a high rock about half a cable's length from the cliffs, and on its north side the remarkable Tower Rock, of red sandstone, joined to the island, and which can be seen from the S.W., over the low N.W. point, as well as from the N.E.

Vessels occasionally anchor under Entry Island in northerly and easterly winds, but it is rough riding, by reason of the sea which rolls round the island.

The inhabitants of Entry Island raise cattle and sheep, depending more upon the sale of fresh provisions than the fisheries. Vessels may, therefore, almost always obtain supplies.

From Sandy Hook the south coast of Amherst Island, consisting *South coast of Amherst Island.* of sand-hills and beaches, with shoal water half a mile off, curves round to the westward, for 6 or 7 miles, to the entrance of a basin, which extends nearly across the island to within less than half a mile of Pleasant Bay. The Basin is now so nearly closed *The Basin.* with sand, that boats can only enter at high water, and in the finest weather; but, formerly, the entrance was deep enough for large schooners, and it has been frequented by those vessels within the memory of the elder inhabitants.

There is good anchorage off the entrance, in from 6 to 9 fathoms, sandy bottom, and with winds from N.W. round by north to east.

Amherst Cliffs. A mile and a half to the westward of the entrance of the basin, cliffs commence and continue, except in Cabane Bay, to the west cape, which is the highest cliff of Amherst Island, its summit being 300 feet above the sea. There is a remarkable rock above water close to the shore, and about a quarter of a mile to the southward of it.

Cabane Bay. CABANE BAY is a small bight, between the south and S.W. capes of Amherst Island, where vessels may safely anchor with northerly and easterly winds, and where good water may easily be obtained. The best berth is in 8 or 9 fathoms, sandy bottom, off the centre of the bay, with the south cape and Cape Percé in one, three-quarters of a mile off shore.

36. From the west cape, the remainder of the sea-coast of Amherst Island consists of red cliffs, without beach, but having shoal water one-third of a mile off shore, all the way to West Lake, a small pond at the S.W. end of the sand-bars, which join Amherst and Grindstone Islands. At the N.E. extremity of these sand-bars is GULL ISLET, which is small, rocky, and close to the western point of Grindstone Island, and has shoal water off its west point to the distance of one-third of a mile. About $1\frac{1}{2}$ mile south-westward of it, nearly $1\frac{1}{4}$ mile off the N.W. outlet of Basque Harbour, and with the west side of Gull Islet and Gros Cap in one, lies a rocky shoal with 3 fathoms at low water, and leaving no good passage between it and the shore. Close to the N.E. of Gull Island is the Etang du Nord, a small inlet, affording good shelter to boats.

Shoal.

Hospital Rock. The northern shore of Grindstone Island is of red sandstone cliffs, less high than those of Amherst Island. Near their N.E. extreme lies the Hospital Rock, close to the shore, and also some rocky 3 fathom patches, more than half a mile from the shore, as will be seen in the chart.

White Horse. The WHITE HORSE is the name of a very dangerous reef, lying N. 60° E., 7 miles, from Deadman Islet; and due W.N.W., $5\frac{1}{2}$ miles, from Gull Islet. It is extremely small, being scarcely more than a cable's length in diameter; and having 10 feet least water over pointed rocks, on which the sea often breaks. On this reef the summit of Entry Island is seen over a low part of the sand-bars, at the N.E. outlet of Havre Basque, but this mark cannot be easily discerned by a stranger,

nor is there any other; but the bearings and distances, together *White Horse*. with the chart, will be a sufficient guide. To those that can take a terrestrial angle with a quadrant, a matter so simple that it is astonishing that it is not more generally known and practised, the following may be of use. When on the reef the western extremity of Amherst Island and Hospital Cape (the north-eastern extremity of the cliffs of Grindstone Island) subtend an angle of $91^{\circ} 30'$; consequently, with these points subtending a less angle by 3 or 4 degrees, the vessel will pass outside of the reef. With a greater angle, 94 or 95 degrees, she will pass inside of it, or between it and the shore.

There are irregular soundings and foul ground between this reef and the shore, but nothing less than 5 fathoms, excepting what has been already mentioned.

The *PIERRE DE GROS CAP* is another dangerous reef of rocks, *Pierre de Gros Cap*. nearly of the same size as the White Horse, and having 18 feet least water. This reef is seldom seen, as the sea breaks upon it only in very heavy weather. It lies N. 62° E., 6 miles, from the White Horse; due north from the west point of Etang du Nord; N. 56° W. from Hospital Cape, and $3\frac{1}{2}$ miles off Cape le Trou, the nearest point of Grindstone Island. The marks on this reef are—First, The summit of Alright Island seen over the N.E. point of Grindstone Island, which is in the lagoon, and very nearly on with Hospital Cape. Secondly, the Bute de Portage, a hill of Amherst Island, situated about $1\frac{1}{2}$ miles N.W. of the Demoiselle, midway or in the centre of the narrow passage between Gull Island, and the west point of Etang du Nord. These marks kept open will clear the reef to the N.E. and S.W., and a vessel will pass well clear outside of it, and also of the White Horse, if Deadman Islet be not brought to bear to the westward of S. W. $\frac{1}{2}$ W.

From Hospital Cape to Wolf Island, off which there is a rocky 3 fathom shoal nearly half a mile from the shore, the northern coast of the Magdalens consists merely of sand-beaches and sand-hills, for a distance of 9 or 10 miles. The low sandstone cliffs of *WOLF ISLAND*, which is about three-quarters of a mile *Wolf Island*. long, interrupt the continuance of the sandy shore for only half a mile; the sand-beaches then recommence, and continue, with high sand-hills occasionally, 9 or 10 miles further, to the

north cape. In all this part the sand-bars may be safely approached by the lead as near as 9 or 10 fathoms of depth of water.

North Cape.

The NORTH CAPE of the Magdalens is the northern point of Grosse Isle, and a precipice of considerable height, but not so high as the west point of the same island, which is in the great lagoon, and 300 feet above the sea.

North Cape Rocks.

The NORTH CAPE ROCKS, some of which always show, lie to the westward of the cape, the outermost being 600 fathoms off shore. The west end of these rocks bears S.S.E. from the high S.W. side of Grosse Isle, and their extent to the eastward is marked by the N.E. sides of the north and N.E. capes in one. Therefore, in running down from the westward to anchor under the north cape, do not come nearer to the shore than 1 mile until the above-named marks open. In this anchorage, namely to the eastward of the north cape, vessels may ride in 8 or 9 fathoms, over sandy bottom, with all southerly winds, and will find good holding ground, and plenty of room to get under weigh. Water may be had in small quantities near the houses on the east side of the north cape, but there are no good watering-places excepting those already mentioned.

The coast continues from the north cape, in a curved line of sand-beaches and sand-hills, for about 6 miles, which distance again brings us to the east point, and completes the description of the Magdalens.

*Making the
Magdalens
from the South-
ward.*

37. Although I have given a general description of the appearance of the Magdalens, yet as vessels passing to the southward of them have been directed to endeavour to make Entry Island, it may be useful to add, that that island, when first made from the eastward, will appear like a double peaked hill, sloping somewhat abruptly down to perpendicular and high cliffs on either side. The S.W. point of Amherst Island is also a steep cliff, but of less height, and as there is no land to the southward and westward of it, it cannot be mistaken. The land rises from it in undulations to the higher parts of the island. Should the weather be foggy, the soundings, as shown in the charts, will safely guide vessels passing to the south-eastward of the islands. The general soundings around the Magdalens, which extend off them so many miles in every direction, and which have now

for the first time been correctly laid down by us, thus affording an invaluable assistance to vessels at night or in foggy weather, will be better understood from the charts than by any written directions.

I have now only to notice the important subject of the *Tides and Currents*. set of the currents or tidal streams around these islands, respecting which I can say nothing that will not be subject to exception, for they are so irregular, that the most experienced and intelligent pilots for the islands, who are also fishermen, who have passed their lives in fishing craft around them, can give no certain account of their rate and direction, but all agree in stating that they vary in both respects, either from the effects of winds, or other and unknown causes.

Nevertheless, the following observations will hold good as a general rule; and although subject to occasional interruption, the set of the tidal streams, which I am about to describe, will be found to recur with considerable constancy in fine weather.

A few miles outside of Bryon Island and the Bird Rocks, there appears to be usually a current setting to the south-eastward, out of the Gulf; but the stream of flood tide flows between them and the Magdalens. The stream of flood comes from the S.E., and is divided by the east point of the Magdalens. One branch of the stream sets strongly over the Long-spit, which, with the Old Harry Head and the shoals off it, turn it off to the south-westward towards Entry Island, leaving nearly slack water in the bay between Coffin Island and Cape Alright, and also in Pleasant Bay. The other branch, to the northward of the islands, follows the shore from East Point round to the south-west cape of Amherst Island, whence the greater part of the stream continues its course to the S.W.; whilst the remainder, following the shore, runs round, and along the southern coast of Amherst Island, until it meets the before-mentioned other branch of the stream from the east point, setting off the east side of Entry Island; it is overcome by this other branch, and turned gradually round to join the general weak stream of flood to the westward in the offing. *Flood Stream.*

On the S.E. side of the islands, the stream of the ebb tide *Ebb Stream.* sets strongly out of the lagoons and out of Pleasant Bay, between the Sandy Hook and Entry Island. It is also often found running to the westward along the southern shores of Amherst

GULF OF ST. LAWRENCE.

Tides.

Island, and right round it in like manner, but contrary in direction, to the course of the flood already described. In the offing, at the same time, the stream of ebb is from the S.W., and sets over the Long-spit off the Sandy Hook, where it meets the stream from the N.W., which has followed the north shore of the islands, round from Amherst Island to the east point. The meeting of these two streams of the ebb tide, together with the shoalness of the water, causes so heavy a breaking sea in strong easterly winds, that the fishing shallops dare not venture at times to pass the point.

The rate of either stream seldom amounts to a knot, excepting close in-shore, or round the points. The ebb, however, is generally the stronger stream, and its rate is increased by westerly winds, as is that of the flood by winds from the eastward.

ANTICOSTI ISLAND.

*General
Description of
Anticosti.*

38. The island of Anticosti, situated in the entrance of the N.W. arm of the Gulf of St. Lawrence, is 122 miles long, 30 miles in extreme breadth, and about 270 miles in circumference, following the coast from point to point across the bays.

Limestone.

Its shores are everywhere of rock, belonging to one great formation, namely, a very ancient secondary limestone, affording in some parts excellent building stone, of which the two light-houses have been constructed.

Dwarf Trees.

On and near the coasts, the limestone is covered with a thick and often impenetrable forest of dwarf spruce, which, in some exposed situations, is only a few feet in height, with gnarled branches, so twisted and matted together, that a man may walk for a considerable distance on their summits. Extensive banks of limestone shingle, bush, swamps, morasses, and also beds of peat, are of common occurrence.

Timber.

The interior of the island is probably less sterile, for I have seen white spruce spars large enough for the masts of a schooner of 60 tons, and others of juniper; with a species of larch of excellent quality, and of sufficient size to form the keel of a vessel of the same dimensions. Black and white birch, and ash, the latter of bad quality, complete the list of trees which attain to any size upon the island. These, indeed, are not indicative of a very good soil anywhere, but when they attain to large dimensions some soil at least will be found.

Land birds appear to be very scarce, probably because there are few wild fruits for their support, the cloud berry, on the peaty morasses, being the only one we observed in any plenty. Even the common Canadian partridge, or wood grouse, to be found almost anywhere else, is said not to exist upon this island. In winter, however, the white partridge, probably ptarmigan or willow grouse, is seen in the interior. There are as few varieties of quadrupeds as of the feathered tribes. The squirrel and Canadian hare, without which I have rarely seen an island of any size in the Canadas, were never seen by us, and are reported not to exist here. If I may believe the account of M. Gamache, who has resided and hunted here for many years, there are only 4 or 5 species of quadrupeds upon the island, namely, the black bear, fox, otter, martin, and a few mice. I was also informed that there are neither snakes, toads, nor frogs, nor did we ever see any; and that rats, which have occasionally landed from wrecks, have soon disappeared.

The climate, from its proximity to an open sea, is probably not more severe in winter than that of Quebec, although further to the north, but the summers are cold, wet, and stormy, with frequent fogs. Frosts are common in August, and in some severe seasons they occur in every month of the year. It is probable that no other grain but barley would ripen here, unless it might be oats occasionally in sheltered situations. Potatoes are frequently prevented by early frosts from coming to perfection, although planted in the most favourable situations.

It appears, therefore, that not much can ever be expected from the products of the soil, but the forests, the rivers, the reefs, and the surrounding sea, contribute in affording a profitable return to the industry of the few persons who reside upon, or frequent the island.

Streams of excellent water descend to the sea on every part of the coasts. They are generally too small to admit boats, becoming rapid immediately within their entrances, and even the largest of them, Observation River, to the westward of the S.W. point, is barred with sand, excepting for short intervals of time after the spring freshets or heavy rains.

Many of these streams abound with trout, and are visited periodically by great numbers of salmon, which are taken by the 2 or 3 resident families, and salted for the Quebec market.

*General
Description of
Anticosti.
Birds.*

Quadrupeds.

Climate.

Rivers.

*Trout and
Salmon.*

GULF OF ST. LAWRENCE.

*General
Description of
Anticosti.*

Codfish.

Bears.

Exports.

Elevation.

No Harbour.

*Dangers of its
coasts.*

Seals frequent the flat limestone reefs, and are killed annually in great numbers for their skins and oil.

Codfish are taken occasionally off several parts of the coast, in small schooners from the Magdalens, and other parts of the Gulf. Their crews also join the occupation of wrecker to that of fishermen. The black bears are very numerous, and may frequently be seen wandering along the shores. Their skins, together with a few of the other animals named, salted salmon, seal skins, and seal oil, are the only exports, and are taken to Quebec, together with occasional cargoes of goods and people saved from wrecks in M Gamache's schooner, the only vessel belonging to the island. Wild geese, outards, and ducks of various species are abundant, and breed upon the island.

Anticosti is estimated to be nowhere higher than 700 feet above the sea. Its south coast is low and shelving, with reefs of flat limestone which dry at low water. There is, however, a range of highlands in rear of the S.W. point, and extending for some miles both to the north-westward and south-eastward of it. The north coast, for 70 or 80 miles to the westward of the east point, is bold, precipitous, and of considerable elevation. Picturesque headlands, the eastern terminations of parallel ridges of table land, that rise gently with the strata from the S.W., end in magnificent cliffs of limestone, which are externally so nearly white from the effects of weathering, as to resemble chalk. Some of these cliffs are upwards of 400 feet in perpendicular height. The remainder of the north coast is low, with reefs of flat limestone, like the southern shores.

It is unusual to find an island so large as Anticosti without a good harbour. Limestone coasts are in general characterised by deep inlets and bays, peninsulated points, and detached islets and rocks, but nothing of the kind will be found here, and there is not a single detached shoal off any part of the coasts.

This island has been generally believed to be extremely dangerous. Its reefs of flat limestone, extending in some parts to $1\frac{1}{2}$ mile from the shore, the want of anchorage off most parts of the coast, and above all the frequent fogs, justify this belief in part, but not in so great a degree, as to render reasonable the dread with which it seems to have been occasionally regarded, and which can only have arisen from the natural tendency to magnify dangers of which we have no precise knowledge.

The people in charge of the lighthouses and provision-posts, and one man at Fox Bay, are the only resident inhabitants of the island. The provision-posts have been established by the government and legislature of Lower Canada, for the relief of the crews of vessels wrecked upon the island. Vessels are more frequently lost here in the bad weather at the close of the navigable season than at other times, and their crews would perish from want and the rigours of a Canadian winter, if it were not for this humane provision. The first of these posts is at Ellis Bay, the second at the lighthouse at the S.W. point, the third at Shallop Creek (sometimes called Jupiter River), and the fourth at the lighthouse on Heath Point.*

The lighthouse on the extremity of the S.W. point, has been built of a very beautiful greyish-white encrinital limestone, quarried on the spot. The tower is of the usual conical form, and 75 feet high. The light, which is bright, and revolves every minute, can be seen from N.N.W. round by west and south to S.E. by E. The lantern is elevated 100 feet above the sea at high water; consequently the light can be seen from a distance not exceeding 15 miles, when the height of the observer's eye is 10 feet above the sea. When the height of the eye is 50 feet, the greatest distance from which the light can be seen will be about 19½ miles, and if the eye be elevated 100 feet the light will be visible as far off as 23 miles nearly, in the average state of the refraction. Hence, by ascending the rigging till the light just shows above the horizon, and then measuring the height of the eye above the sea, a very near estimate of the vessel's distance at night may be obtained. This lighthouse, and attached provision-post, are in charge of Lieutenant Harvey, on the half-pay of the navy.

The other lighthouse, on the southern extremity of Heath Point, is of the same form, dimensions, and colour, as the above,

* There are direction boards erected on the shore, or nailed to trees from which the branches have been cut off, near the beach, and on various parts of the coast. These direction boards are intended to point out to shipwrecked persons the way to the provision posts. The direction boards were placed on the following parts of the shore, as I find from Mr. Lambly's remark-book, for I have not seen them all:—1st. On the west point. 2nd. Four leagues south-eastward of Ellis Bay. 3rd. Ten leagues westward of Shallop Creek. 4th. Seven leagues eastward of Shallop Creek. And there were formerly others on Heath Point and the S.W. point, which the lighthouses have rendered unnecessary.

*Description of
Anticosti.
South Coast.*

and is also built of the island limestone. It has not as yet been lighted, from want of funds, but is intended to show a bright fixed light from W.N.W. round by S. to N.E. by N. The lantern will stand 100 feet above the sea.

Having given this general description of the island, I will now notice more particularly its shores, reefs, and anchoring places.

East Cape.

39. The EAST CAPE OF ANTICOSTI is a perpendicular cliff of limestone, rising to the height of 100 feet above the sea. The ridge, of which it is the south-eastern termination, trends to the westward inland, and the extremity of the very low land to the southward of it is Heath Point, on which is the lighthouse, bearing from the east point N.E. $\frac{1}{2}$ N., $3\frac{1}{4}$ miles. Between the

Wreck Bay.

two points is Wreck Bay, which is dangerous and affords no anchorage. Off to the S.E. from the east cape a reef extends rather more than one-third of a mile.

Heath Point.

HEATH POINT is of limestone, about 10 feet high, with a superstratum of peat, in which there are several ponds of dark bog water. Being so low, this Point disappears below the horizon at the distance of a few miles, the lighthouse then appears like a sail off the island, and is extremely useful, in marking the extent of the low land to vessels, either from the eastward or westward, as well as in showing its position from the southward, from which direction it cannot be made out at night, being hidden by the high land behind, or to the northward.

*Heath Point
Reef*

The most dangerous reef off this end of the island, runs out from Heath Point to the E.S.E., nearly 2 miles, at which distance there are 5 fathoms of water. Within that distance the reef is composed of large square blocks of limestone, with very irregular soundings, varying from 2 to 5 fathoms. The rocky and irregular soundings from 5 to 7 fathoms extend nearly 3 miles off Heath Point, so that I recommend vessels not to approach nearer, on any bearing from the Point between S.E. by S. and E. by S. With the east cape bearing N. by W. the vessel will pass just outside of the shallow and irregular soundings in about 20 fathoms of water.

*not to be ap-
proached nearer
than 3 miles, or
in 20 fathoms
water.*

*Heath Point
Anchorage.*

Off Heath Point, to the southward and westward, the shoal water does not extend beyond three-quarters of a mile, and further off on that side there is one of the best open anchorages on the island. The best berth is in 10 fathoms, over sand and mud bottom, with the lighthouse E. by N., and Cormorant Point

nothing to the westward of W.N.W. The vessel will then be *South Coast*. 2 miles off shore, and will be sheltered from all winds from W.N.W. round by the N. to E. by N.

From Heath Point Cormorant Point bears W. by N., 6 miles; *Cormorant Point*. and the south point bears W.N.W. $16\frac{1}{2}$ miles from Cormorant Point. In this distance the coast is low, and undulating, with points of low limestone cliffs, and beaches of sand and shingle in the bays, inclosing large ponds or lagoons, into many of which the tide flows, and also small streams from the interior of the island. This part of the coast may safely be approached by the lead, as will be seen in the chart, for the reefs nowhere extend further off than three-quarters of a mile till we come to the south point.

The SOUTH POINT is a cliff of sandy clay, resting upon lime- *South Point*. stone. It is estimated not to exceed 60 feet in height, and there is nothing remarkable in its shape; but there is no other clay cliff near it, and as it is an extreme point, there will be little difficulty in distinguishing it by the trending of the land. The reef off it to the southward, runs out nearly $1\frac{1}{2}$ miles, and the sea *Reef*. usually breaks upon it. The light on Heath Point and Cormorant Point in one, bearing E. by S., clear this reef at the distance of 2 miles, but I fear that the light will seldom be seen up to the reef, which is distant 22 miles from it. The leading mark will nevertheless be of use to vessels between South Point and Cormorant Point.

From South Point to the lighthouse on the S.W. point, a *South Coast*. distance of 56 miles, there is such a sameness in the character of the coast, that it is very difficult to make out one part from another.

The houses, however, of Mr. Hamelle, in charge of the pro- *Shallop Creek*. vision-post at Shallop Creek, will be seen 13 miles north-westward of the south point, and at the first limestone cliff to the north-westward of those houses is Pavilion River, 24 miles from *Pavilion River*. South Point. In this distance the coast is very low, and may be approached safely by the deep sea lead, the soundings in moderate depths extending from 5 to 8 miles off as will be seen in the chart. The coast begins to rise at Pavilion River, there being a high ridge close in rear of the coast all the way to the south-west point, and beyond it for some miles. This distance of 32 miles, between Pavilion River and the S.W. point, comprises

Description of the boldest parts of the south coast of the island, but should be Anticosti. very cautiously approached in foggy weather, as there is little or South Coast. no warning by the lead. When far enough to the westward, the light on South-west Point bearing nothing to the westward of N.N.W., as before directed (art. 23), will be a sufficient guide.

Reefs off the South-West Coast. In the whole distance from South to South-west Points, the reefs nowhere extend further off from high water mark than one mile, and the island may therefore be safely approached to within 2 miles.

Salt Lake Bay. Eleven miles south-eastward of South-west Point, is SALT LAKE BAY, which has fine sandy beaches, enclosing lagoons or ponds, into which the tide flows. Off the centre of this bay, and with its N.W. point bearing N. by E. $\frac{1}{2}$ E., distant $1\frac{3}{4}$ miles, there is very indifferent anchorage, in 7 fathoms, over sandy bottom. Vessels should be careful not to anchor further to the southward and eastward, since there is some foul and rocky ground about a mile in that direction from the position which I have recommended. There are 7 fathoms rocky bottom marked in the chart on the spot to which I allude, and there is probably less water between it and the south-eastern point of the bay, so that no one should attempt to pass between it and the shore.

South-West Point. The S.W. point of Anticosti is a low projecting mound of limestone, having a small cove on its north side, which forms it into a peninsula. The land rises gradually, in the rear of this, to the summit of the ridge abovementioned. On the south side of the point there is a beach of limestone gravel on which boats may land, as well as in the cove on the north side, when the wind is off the land, and the sea smooth. On the north side of the point, and for several miles along the coast to Observation River, the cliffs are perpendicular and washed by the sea. The lighthouse (page 65) stands on the western extremity of the point, and forms a very conspicuous land-mark. A reef extends out from the point, to the west and S.W., not more than half a mile; and 2 miles off, in the same direction, there are 30 fathoms, over rocky bottom, deepening rapidly to 65 fathoms, with sand and shells, at the distance of 3 miles. At the distance of 6 miles, to the southward and westward of the point, the depth is about 110 fathoms, with mud bottom, and increases to 200 fathoms nearly midway towards the south coast.

Landing Beaches.

Lighthouse.

Reef from S.W. Point.

Soundings.

There is a bay on the north side of the point, in which vessels *West Coast* may anchor in 12 or 13 fathoms, over a bottom of sand, gravel, *Anchorage at South-West Point.* and broken shells, and with the extremity of the point bearing S.S.W. $\frac{1}{2}$ W., distant three-quarters of a mile, when the cliffs to the eastward will be at the same distance. The shelter is from N. by E. round by E. to S. by W., and small vessels may lie closer under the point, but it is a dangerous state to be caught in by westerly winds, which are preceded by a heavy swell. The ground, I think, is not to be trusted, so that, altogether, I do not recommend any vessel to anchor here unless in case of necessity.

There is no anchorage from South-west Point to Ellis Bay, *No Anchorage from thence to Ellis Bay.* and as I have already given directions respecting this part of the western coast (art. 23), little remains to be noticed. The reefs of flat limestone extend from it, in most parts, fully a mile; and often have 10 or 12 fathoms of water close outside of them; but vessels, with the lead going, may safely stand in as near as 2 miles, or, which will be safer than an estimated distance, had better tack in 17 fathoms.

OBSERVATION RIVER, $5\frac{1}{2}$ miles northward of South-west *Observation River.* Point, is the largest stream on the island, having 5 or 6 feet of water in its entrance, after the melting of the snows in the spring of the year, but soon becomes barred with sand by the S.W. gales. It becomes shoal and rapid immediately within, though it has a course from the eastward of many leagues. Its source does not appear to be known to the people of the island. Immediately to *High Sandy Cliffs.* the northward of this river there are very conspicuous, and high, sandy cliffs. The St. Mary Cliffs, 21 miles from South-west *St. Mary Cliffs.* Point, are also of sand, less high, and less remarkable, but yet not difficult to distinguish.

BECSIE RIVER is a very small stream, at the head of a small *Becacie River.* cove affording shelter to boats, and where there is a hut, at which a hunter and fisherman occasionally resides. It is 7 miles north-westward of the St. Mary Cliffs, and 12 miles south-eastward of Ellis Bay.

ELLIS BAY affords the only tolerably sheltered anchorage *Ellis Bay.* in the island. Vessels, whose draught is not too great for a depth of 3 fathoms, may safely lie there during the three finest months of summer, namely June, July, and August; but they should moor with an open hawse to the southward. Larger vessels, whose object is to remain for a few hours only, may

Description of Anticosti. West Coast. anchor further out, and in $3\frac{1}{2}$ and 4 fathoms, but neither the ground nor the shelter will be found so good as further up the bay.

Best Anchorage in Ellis Bay. The best berth is in a line between Cape Henry and the white cliff, bearing W.S.W. $\frac{1}{2}$ W., and E.N.E. $\frac{1}{2}$ E., respectively, from each other. Gamache House, N. by E., and Cape Eagle between S.S.E. $\frac{1}{2}$ E., and S.S.E. $\frac{1}{2}$ E. The vessel will then be in 3 fathoms, over muddy bottom, distant about 300 fathoms from the flats on either side, and about half a mile from those at the head of the bay. The extremities of the reefs, off Capes Henry and Eagle, will bear S.W. by S., and S. $\frac{1}{2}$ E., respectively; thus leaving $3\frac{1}{2}$ points of the compass open, but in a direction from which heavy winds are of very rare occurrence, and never last long. Moreover, when they do chance to occur, the sea is much less at the anchorage than might be expected, although very heavy in the entrance between the reefs. These reefs are of flat limestone, and dry at low water; and as the tides only rise from 4 to 7 feet, the sea always breaks upon them when there is the least swell. The reef off Cape Henry runs out nearly a mile to the southward, and that off Cape Eagle nearly three-quarters of a mile to the westward. The entrance between them is 600 fathoms wide, from 3 fathoms to 3 fathoms. Extensive flats project from these reefs quite round the bay, and do not entirely dry at low water, excepting in very low spring tides, but there are immense boulder-stones upon them which always show. These flats occasion the landing to be very bad, excepting at high water, which is the only time that supplies of good water can be obtained from Gamache River.

Reefs from Capes Henry and Eagle.

*Bad landing.
Good Water.
Gamache River.*

Cape Eagle easily recognised.

Directions for entering Ellis Bay.

Ellis Bay can be easily made out from sea, for Cape Henry is a bluff point, and the land being very low at the head of the bay, occasions the opening to show distinctly. On a nearer approach Cape Eagle and White Cliff on the east side, and the houses near the head of the bay, will be easily recognised with the assistance of our chart; whilst two ridges, or hills, will be seen far back in the country, and to the northward and eastward.

The long line of breakers on either side, and the numerous large stones so far from the shore a-head, will present anything but an agreeable appearance to those who may approach this bay for the first time, but there will be no danger, if the following directions be attended to. In approaching the bay from the west-

ward, with westerly winds, run down along the outside of the *West Coast*. reefs off Cape Henry by the lead, and in 10 fathoms, until the *Ellis Bay*. following leading marks come on; namely, the west side of *Entrance* White Cliff on with the east side of the westermost of two hills, *Marks*. far back in the country, and bearing N.E. $\frac{3}{4}$ N.; then haul up with these marks on, and they will lead you into smooth water close under Cape Henry Reef, in $3\frac{1}{2}$ fathoms. Continue running in, with these marks on, till Gamache House bears N. by E.; then haul up for it, and anchor in the berth which I have previously recommended. The lead should be kept going; and the reefs on either side should not be approached nearer than 3 fathoms, in any part, until you arrive at the anchorage.

In running for the bay from the south-eastward, with an easterly wind, come no nearer to the west point of Cape Eagle Reef than 7 fathoms, until the east side of White Cliff come on with the east side of the same hill as before; then haul up with this mark on till the houses bear N. by E., and proceed as above directed. Take notice that the west side of White Cliff is used for the leading mark in westerly winds, and the east side in easterly winds, the intention being to keep the vessel in either case from going too near the lee side of the channel.

On the outside of Cape Henry, and continuing to the west *Reefs between Cape Henry and West Point*. point of Anticosti, reefs extend $1\frac{1}{4}$ miles from the shore; and vessels approaching it should keep the lead going, and attend to the soundings in the chart.

40. WEST POINT is low and wooded, with reefs which do not *West Point*. extend beyond a mile from the shore, and vessels may pass it in 15 fathoms at the distance of $1\frac{1}{4}$ miles.

The north coast of Anticosti, between the west and north *North Coast*. points, is low, with reefs of flat limestone, extending 1 mile from the shore. There are soundings, in moderate depths, for more than 1 mile out from the reefs. Vessels should not go nearer than 25 fathoms. In the rear of the coast, and about halfway between the west and north points, are the two hills or ridges, mentioned as forming one of the leading marks for Ellis Bay. From North Point to High Cliff, a distance of 13 miles, the coast is rather more bold and elevated, parallel ridges, in an east and west direction, and with small streams between them, beginning to abut upon the coast. NORTH POINT is wooded,

Description of of very moderate height, and without any cliff. It is so little remarkable as to be only distinguished by the change which takes place at it in the direction of the coast. High Cliff Cape is easily recognised, being the only cliff on the island that has a *talus* in front of it, or that has not its base washed by the sea at high water.

From High Cliff to White North Cliff. From High Cliff to White North Cliff, a distance of 26 miles, the coast is low in front, with ridges of considerable elevation a few miles back in the country. This is the most dangerous part

Reefs 2 miles in breadth. of the north coast, for the reefs extend nearly 2 miles out from high water mark, beginning at some low cliffs 7 miles eastward of High Cliff Cape, and continue to do so for 4 or 5 miles to the south-eastward, after which they gradually diminish in breadth, till at White North Cliff they are not more than half a mile from the shore. There is more or less warning by the deep sea lead all along this part of the coast until we approach White North Cliff, off which there are 70 fathoms, at the distance of $1\frac{1}{2}$ miles from the surf.

White North Cliff. White North Cliff is very remarkable, for there is no other high cliff near it. It appears like a white patch on the land, and can be seen from a distance of 6 or 7 leagues.

Carleton Point. Anchorage, Wood and Water. Low cliffs commence 4 miles south-eastward of White North Cliff, and continue to Carleton Point, under which vessels may anchor in fine weather and westerly winds, and obtain wood and water. Ten miles further to the south-eastward is Cape Obser-

Cape Observation. vation, a bold, high, and remarkable headland. On its west side there is a magnificent range of greyish white cliffs several hundred feet high. At the extremity of the cape, these cliffs become suddenly much lower, and then rise again to their former elevation for a short distance on the east side. As this is well described in the chart, the cape will be easily recognised. Vessels may anchor under it with westerly winds and fine weather, and obtain supplies of wood and water very conveniently. Twelve and a half miles further south-eastward, along a bold coast with high greyish white cliffs and small bays between, brings us to Bear Head, also of greyish white cliffs, 400 feet high, and resembling in some degree Cape Observation. This last-named cliff has no equally high cliffy headlands to the westward of it, whilst Bear Head has a difference which will prevent the one from being mistaken for the other.

Anchorage, Wood and Water.

Bear Head.

From the West Cliff to Bear Head the coast is extremely bold, *North Coast.* there being in most parts 100 fathoms of water within 3 miles of the shore.

BEAR BAY is situated between Bear Head and Cape Robert, *Bear Bay.* which are distant nearly 6 miles from each other, in a N.N.W. $\frac{1}{4}$ W. and S.S.E. $\frac{1}{4}$ E. direction, nearly. It is by far the best roadstead *Good Roadstead.* on the north coast of Anticosti, and, indeed, the only one in which a large ship would like to anchor, unless she had some particular object in view. It is sufficiently roomy, the bottom is excellent for holding, the depth of water moderate, and the shelter extends from N.N.W. round by west and south to S.E. by S. In order to recognise this anchorage, it may be observed that Cape *Cape Robert.* Robert consists of cliffs of the same colour and elevation as those of Bear Head; and that there are two other points of cliffs 300 feet high, within the bay, the south-eastmost of which is named Tower Point. Between Tower Point and Cape Robert, at *Tower Point.* a distance of one mile from the former, as well as from the western shore, and in 13 fathoms of water over a bottom of brown mud, is the best anchorage, where Tower Point will bear N.W. $\frac{1}{2}$ W., Cape Robert S.E. $\frac{1}{2}$ S., and Bear Head N. by W. $\frac{1}{4}$ W.

Bear Bay is divided into three smaller bays by the two high points of cliff which I have mentioned. In each of these bays there are fine bold beaches of sand and limestone shingle, and streams where water may be easily obtained. But the principal *Water.* stream is Bear River, which enters the southernmost of the three bays, close to the S.E. side of Tower Point. It is too shallow and rapid to admit boats, but the water is clear and good. The cliffs in Bear Bay are magnificent: they are of greyish white limestone, in thin strata dipping very slightly to the southward, and are perpendicular or overhanging. At the extremities of the points the cliffs are rounded by the action of the waves and atmosphere so as to resemble towers, which resemblance is rendered stronger by the masonry-like appearance of the rock. The trees are of diminutive growth.

From Cape Robert to Table Head, a distance of 19 miles to *Table Head.* the south-eastward, the coast is broken into small bays, with shingle beach and small streams between high headlands, terminating in perpendicular cliffs, the bases of which are washed by the sea. None of these bays afford good anchorage. Table

- Description of Head* is rendered remarkable by the hill from whence it derives its name, and which rises immediately from the summit of the cliffs.
- Anticosti.*
- East Coast.*
- Fox Point.* Fox Point is 4 miles further to the south-eastward, and much lower than Table Head. Fox Bay, which is a little less than 2 miles to the southward of Fox Point, is about 1 mile wide and deep, with sandy beach at its head, where there is a considerable stream issuing from a small lake. Boats may enter the outlet of this lake at high water. The house and store of
- Stream and Lake.*
- Godin's House.* M. Godin are on the N.W. side of the head of the bay, and are the scenes of the dreadful sufferings and melancholy fate of the crew and passengers of the ship *Granicus*, wrecked on this coast in November 1828, and who all perished from want of food, after enduring the most horrible misery, before the following spring.
- Granicus wrecked.*
- Reef Point.* REEF POINT, of very low limestone, is the southern point of Fox Bay, from which a reef of flat limestone, covered with only a few feet of water, runs out to the distance of fully $1\frac{1}{2}$ miles. There is a depth of 10 fathoms close off the end of this reef, so that it is extremely dangerous. To be sure of clearing it to the north-eastward a vessel should not be brought nearer by the lead than 18 or 17 fathoms; or if any of the land to the north-westward of Table Head be open clear of it, she will pass in safety.
- Marks for South Reef.*
- From the northern point of Fox Bay, which is a cliff of moderate height, another reef runs out more than half a mile to the south-eastward. A point of the southern reef, before mentioned, extends to the northward in such a way as to overlap the reef off the northern point, leaving an entrance from the north-eastward between the two, only a quarter of a mile wide, and 13 feet deep at low water. Inside, there is a space half a mile wide, from 2 fathoms to 2 fathoms, and with 16 feet in the middle over muddy bottom. A wind from E. by N., or E.N.E., blows right into the bay; but I am told that the sea does not roll in, but in heavy weather breaks on the reefs and in the entrance. This account I believe to be correct, and that small vessels would be perfectly safe there during the summer months.
- North Reef.*
- Fox Bay Anchorage.*
- From thence to East Cape.*
- Anchorage.*
- Between Fox Bay and East Cape, the coast is of limestone cliffs 100 feet in height, bold and free from danger. Between Cape Sand-Top and East Cape vessels may anchor with all westerly winds, in from 16 to 20 fathoms, over fine sand, at a distance of 1 mile from the shore.

41. The tides and currents around Anticosti are so irregular that I can add very little to that which has been already stated (art. 17 and 23).

*Currents and
Tides on North
side of Anti-
costi.*

I have seen the stream run along the land for a whole day at the rate of a mile per hour, in either direction, without any apparent cause, and altogether regardless of the change of tide. At other times I have found the tides regular in shore. Under these circumstances it is evident that the set of the stream, at any time or place, cannot be reckoned upon with certainty.

However, in addition to my previous remarks, I may observe that there is usually very little stream in any direction on the north coast from White Cliff south-eastward to Table Head. From the latter to East Cape, on the contrary, there is very frequently a stream from the northward, running at a rate varying from a half to one knot. In one or two instances I have seen this stream commence and end with the flood tide, so that I have been led to imagine a connexion between them; and, if this be the case, it may arise from the circumstance of its being high water sooner on the north coast, up as high as the Esquimaux Islands, than at the east point of Anticosti. The waters having thus attained a higher level to the northward may, in consequence, flow to the southward. On the other hand it must be mentioned that I have observed this stream during the ebb tide.

It frequently happens that, when this current from the northward is running, another from the W.N.W. comes along the south coast, in which case they meet at the reef off Heath Point, and cause a great ripple or irregular breaking sea. When this has been observed by us, there has been usually a fresh breeze along the land on either side of the island; the wind on the north side of the island being from the north or N. by E., whilst that along the south side was W.N.W. I have seen both these winds blowing a smart double-reefed topsail breeze at the same time, and for a whole day together, and yet never meet round the east end of the island, which is nowhere more than 200 feet in height. Between the two winds there was a triangular space of calm and light baffling airs: the base of this triangle extended from Heath Point to East Cape, and its apex from 5 to 8 miles to the eastward of the island. I mention this circumstance because it would be dangerous for a vessel to stand into the calm space between the two winds, where the high cross sea and con-

*Northerly and
Westerly
Winds meet off
East Cape.*

*Dangerous
baffling space
between those
Winds.*

Anticosti.

stantly changing light airs might leave her at the mercy of the current, in no small danger of being set on the Heath Point Reef.

I have been for hours endeavouring to get out of this singular space, trimming sails to light airs, which did not remain steady to any one point for a minute of time; and I was finally, in spite of every effort to the contrary, carried over the reef by the current, seeing the rocks distinctly under the vessel's bottom, but fortunately drawing too little water to strike upon them.

CHAPTER V.

THE SOUTH COAST OF THE GULF AND RIVER OF ST. LAWRENCE,
FROM GASPÉ TO GREEN ISLAND.

42. Preliminary Remarks.—43. Cape Despair and Leander Shoal. Bonaventure Island. Percé Rock. Mal Bay. Point Peter, and Flat Island.—44. Gaspé Bay. Cape Gaspé, and Flower-pot Rock. Seal Rocks. Douglas Town, and Roadstead. River St. John.—45. Gaspé Harbour. The N.W. and S.W. arms. The Basin.—46. Tides, Currents, Winds, and Soundings.—47. The South Coast from Cape Gaspé to Cape Chatte. Cape Rozier. Griffin Cove. Great Fox River. The Great Pond. Magdalen River. Mont Louis River. St. Anne and Chatte Rivers. Cape Chatte.—48. Cape Chatte to Barnaby Island. River Matan. Little Metis. Grand Metis. Cock Cove, and Mount Camille. Father Point. Rimousky Road. Barnaby Island.—49. Barnaby Island to the Razade Islets. Cape Arignole; its Bays and Reef. Old Bic Harbour. Bic and Biette Islands: their Reefs and the Alcide Rock. Anchorages at Bic. Tides. Edge of the South Bank.—50. The Razade Islets. Basque Island. Apple Island. Green Island, Light-house, Reef, Anchorage, and Tides.

42. PURSUING the system which I have hitherto followed, of describing the coast from east to west, in the order in which they would be seen by a stranger on a voyage to Canada, I shall commence my remarks and directions for the south coast of the Gulf and Estuary from the high land of Gaspé; beginning with Cape Despair, at the entrance of the Bay of Chaleur, and leaving all to the southward of a line from thence to the island of St. Paul for a separate part of this book; not only for the sake of a more distinct geographical arrangement and facility of reference, but also because the southern parts of the Gulf are obviously connected with another line of navigation.

In the last Chapter I gave full descriptions of the appearance and nature of the coasts, because the information which I conveyed was often new, and because it was necessary to describe clearly those objects which were to be referred to as natural beacons for guiding the mariner clear of the numerous dangers with which those coasts and islands abound. But in this Chapter

I shall more freely refer him to the charts for the appearance of the coast, so as to avoid swelling these remarks to an inconvenient size. Besides which, the dangers are few, and for the most part of small importance.

Cape Despair. 43. CAPE DESPAIR, the N.E. point of the Bay of Chaleur, consists of red sandstone cliffs, without beach, and of a moderate height above the sea.

Leander Shoal. LEANDER SHOAL bears from Cape Despair S.S.E., distant rather more than $1\frac{1}{2}$ miles. It is about a quarter of a mile in diameter, from 4 fathoms to 4 fathoms, and has 16 feet least water on one spot, which, however, it is very difficult to find. It is a rocky shoal, and there is a clear passage between it and the

Outer Passage. cape. The leading marks are as follow: the line of the White Head, in one with the inner or N.W. end of Percé Rock, passes just outside of the shoal, in 7 fathoms; therefore the whole of Percé Rock, well open to the eastward of the White Head, will lead clear outside of all. From a half to the whole of the Percé Rock, shut in behind the White Head, will lead clear between the Leander and Cape Despair.

BONAVENTURE ISLAND has bold and perpendicular cliffs of red sandstone and conglomerate on all sides excepting the west. These cliffs, in some parts, attain an elevation of 250 feet above the sea, and their ledges and fissures are the habitation of innumerable gannets. From the west side, shoal water extends to the distance of a quarter of a mile, and there is anchorage in 15 fathoms between it and White Head; but the riding is insecure and heavy in consequence of the swell, which, in bad weather, rolls round the island. The channel between Bonaventure Island and the Percé Rock is about $1\frac{1}{2}$ miles wide, and free from danger.

Percé Rock. The PERCÉ ROCK is 288 feet high, precipitous all round, and bold to seaward. It is narrow, and about one-third of a mile long in a S.E. direction, being an outlier to the range of cliffs on the S.W. side of Mal Bay. It is rendered remarkable by two large holes which have been perforated through it by the waves, and through one of which a boat can pass at high water. Between this rock and the White Head is the Bay of Percé, having a reef at the distance of half a mile to the S.W. of the Percé Rock, and extending out nearly half a mile from the shore, as will be seen

in the chart. Small vessels engaged in the fisheries anchor on either side of this reef, with winds off the land, but it is a dangerous place, and not to be recommended for large vessels. *Percé Bay and Reef.*

The town of Percé, principally inhabited by persons engaged in the fisheries, occupies the shores of the Bay, and Mont Percé. Percé, or, as it is sometimes called, the Table Roulante, rises immediately from it, to the height of 1230 feet above the sea. This mountain is very remarkable, and can be seen at sea from a distance of 40 miles. A reef connects the Percé Rock with Point Percé, and off the N.E. side of the latter small vessels anchor with westerly winds. There is generally a regular tide of flood and ebb, of about a knot, between Bonaventure Island and the mainland: the flood tide running to the S.W. round Cape Despair and up the Bay of Chaleur; and the ebb in the contrary direction. Two or three miles outside, or to the eastward of Bonaventure Island, the current to the southward out of the St. Lawrence, will often be found running regardless of the tides. *Percé Town. Mont Percé. Tides. Outside Current.* (Art. 17.)

MAL BAY is between 5 and 6 miles wide, by 4 miles deep, and entirely open to the S.E. On its S.W. side, and under the Percé mountains, there are magnificent cliffs 366 feet in perpendicular height above the sea. Its N.E. side has low cliffs of sandstone, with occasional beaches. A fine broad sandy beach extends right across the head of the bay, and incloses a shallow lagoon. A considerable river, and several small streams, discharge their waters into the lagoon, which has an outlet in the N.W. corner of the bay, called the Tickle, admitting boats at high water and in fine weather. There is anchorage all round the shores of Mal Bay, but as a heavy sea and thick fog often precede a S.E. gale, and render it difficult for a vessel to beat out, it cannot be recommended. There is an open cove or small bay on the N.E. side, in which a vessel can be occasionally moored close to the shore, and in 3 fathoms water, but this is of no use for the general purposes of navigation. *Mal Bay. Percé Mountains. The Tickle.*

POINT PETER is the N.E. point of Mal Bay, and the south point of Gaspé Bay; it is of low sandstone, and thickly covered with the white houses of the fishermen. FLAT ISLAND lies about 400 fathoms off Point Peter; and is small, low, and of sandstone. There is a clear channel between the island and the point, but no good anchorage; for although vessels occasionally *Point Peter. Flat Island.*



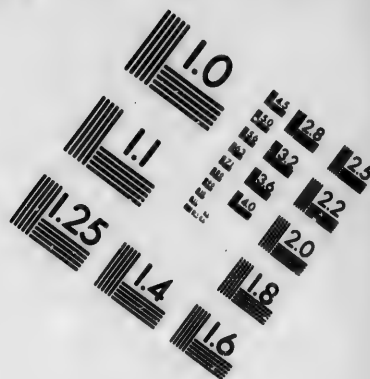
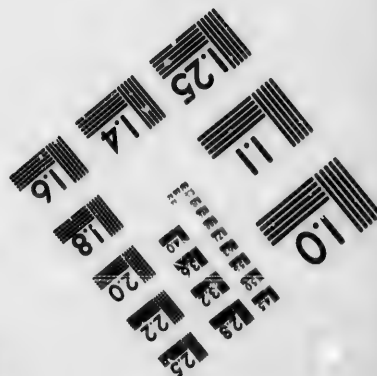
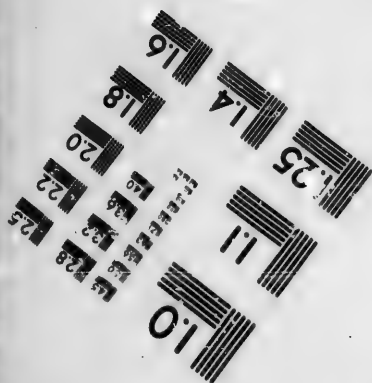
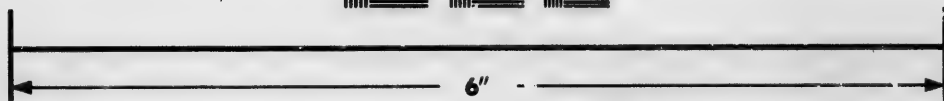
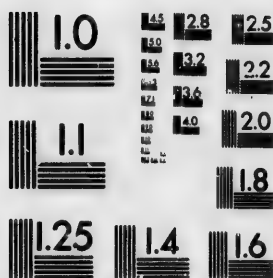


IMAGE EVALUATION TEST TARGET (MT-3)



Photographic Sciences Corporation

**23 WEST MAIN STREET
WEBSTER, N.Y. 14580
(716) 872-4503**

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anchor to the northward of the island, yet the ground is so foul, that there is great danger of losing an anchor from its hooking the rocks.

From Flat Island to Cape Gaspé, across the mouth of Gaspé Bay, the course is N.N.E., $7\frac{1}{2}$ miles.

Gaspé Bay.

44. The admirable bay of GASPÉ possesses advantages which may hereafter render it one of the most important places, in a maritime point of view, in these seas. It contains an excellent outer roadstead off Douglas Town; a harbour at its head, capable of holding a numerous fleet in perfect safety; and a basin where the largest ships might be hove down and refitted.

The course up this Bay from Flat Island to the end of Sandy⁴ beach Point, which forms the harbour, is N. by W. $\frac{1}{2}$ W., rather more than 16 miles. From the Flower-pot Rock to the same point, the course is N.W. $\frac{1}{2}$ N., and distance nearly $11\frac{1}{2}$ miles.

*S. W. side of
the Bay.*

From Point Peter the land rises in undulations to the chain of mountains about 5 miles inland from the south-western shore of the bay. These mountains, in some points, attain an elevation of 1500 feet above the level of the sea, and sweeping round Mal Bay, terminate with the Percé mountains, before mentioned. The south-western shore of Gaspé Bay, from Point Peter to Douglas Town, a distance of 12 miles, presents a succession of precipitous headlands; the cliffs, of bituminous shale and sandstones, being, in their highest parts, 200 feet above the sea. Shoal water extends nearly a third of a mile from the cliffs, and vessels beating should beware of this, since the water shoals too rapidly to allow of much warning by the lead.

Cape Gaspé.

*Flower-pot
Rock.*

CAPE GASPÉ is an extremely remarkable headland, of limestone, having on its N.E. side a magnificent range of cliffs, which rise from the sea to the height of 692 feet. Flower-pot Rock lies close off the S.E. extremity of the Cape, and is also a very remarkable object; the base of it being worn so small by the waves, that it appears astonishing that it can resist their force, or the pressure of the ice. It is sometimes called the "Ship's Head," at others the "Old Woman," by the fishermen, and is so bold, that vessels may haul round it into the bay, within the distance of a quarter of a mile. Boats may pass between it and the Cape when there is no surf. The limestone of Cape Gaspé dips to the

S.W., so that the cliffs within the bay are very much lower than *Gaspé Bay*. those on the outside of the Cape previously mentioned.

The N.E. side of the bay is thickly covered with the houses of *N.E. side of the Bay*. the fishermen, for a distance of 5 miles within Cape Gaspé; the principal fishing establishments belonging, as at Percé, to Jersey merchants. There is an anchorage with good holding ground, but in not less than 17 fathoms, except within a quarter of a mile of the shore, abreast of St. George Cove, Grande Grève, and Little Gaspé. The word Cove, is however inappropriately applied to any part of the shore between Grande Grève and the Cape, for though there are fishing establishments there, there are no coves whatever. This side is bold, and free from danger in every part, with the exception of the Seal Rocks, which are the only detached danger in the bay.

The SEAL ROCKS are $6\frac{1}{2}$ miles within Cape Gaspé, one mile S.E. *Seal Rocks*. by S. from Cape Brulé, and half a mile off shore. The length of this reef from 3 fathoms to 3 fathoms, and in a direction parallel to the shore, is half a mile: and its breadth a quarter of a mile. The least water is 4 feet, and there are $3\frac{1}{2}$ fathoms between it and the shore. When on the outer edge of the Seal Rocks, Cape Brulé is in one with the next cliffy point up the bay, bearing N. 35° W. by compass, and this only mark is sufficient for the safety of vessels beating, for the rocks are out of the way with fair winds.

At Grande Grève, $3\frac{1}{2}$ miles within Cape Gaspé, the ridge *Grande Grève*. of land dips and narrows, so that there is a portage across it, leading to the settlements at Cape Rozier. On the N.W. side of the portage a range of mountains commences, and they continue along the N.E. side of the bay, and the N.W. arm, till they are lost to view in the interior of the country. Opposite to the basin of Gaspé, they rise to the height of 1500 feet above the sea.

DOUGLAS TOWN is a village of fishermen and farmers, standing *Douglas Town*. on the rising ground at the south side of the entrance of the river St. John: its position in relation to Point Peter has been already mentioned. The water is very deep in the outer parts of the bay, being from 30 to upwards of 60 fathoms, over mud bottom; but on approaching Douglas the depth decreases regularly to the anchorage.

Gaspé Bay. The roadstead off the town of Douglas is extensive, vessels may
Douglas Road. anchor in any part of it, and in any depth from 11 to 6 fathoms, over sand and clay bottom; but the best berth is in 7 fathoms, with the entrance of the River St. John bearing N.W. by W. $1\frac{1}{2}$ miles. The course and distance from Cape Gaspé to this anchorage is N.W. by W., $7\frac{1}{2}$ miles. There is, however, no shelter from winds between S.E. by E. and S.S.E., which blow directly into the bay, and roll in a heavy swell. The riding is, nevertheless, much less heavy on such occasions than might be expected; and, as the ground is excellent for holding, a vessel may safely anchor here during the summer months.

Water. Water may be obtained by ascending the River St. John to the
River St. John. islands, a distance of 2 miles. In the spring of the year there is often 9 feet of water in the entrance of this river, which is between 2 points of sand, as will be seen in the chart: and there are 12 feet of water in the narrow channel for some distance within. At the islands the river becomes shallow and rapid.

Cape Haldimand. Cape Haldimand, 2 miles northward of Douglas, is a bluff point of cliff, and the south-eastern termination of the range of hills which separates the harbour, basin, and S.W. arm, from the valley of the River St. John.

Gaspé Harbour. 45. From the N.E. side of Cape Haldimand, Sandy-beach Point runs out to the northward, and forms the Harbour of Gaspé. It is a very low and narrow point of sand, convex to seaward, on which side the water deepens gradually from high water mark to the depth of 3 fathoms, a distance of nearly half a mile: on the inside it is as bold as a wall. Thus this spit, apparently so fragile, becomes a natural dam or breakwater, upon which the heavy swell, which often rolls into the bay, can produce no effect, expending its strength in the shoal water, before reaching the beach. The water deepens immediately outside of 3 fathoms, all along the outside of Sandy-beach Point, and also off its north extremity; so that it is both dangerous and difficult to beat in or out of the harbour at night; the lead giving little or no warning.

Peninsula. To the northward of Sandy-beach Point, at the distance of nearly a mile, is the Peninsula, which is a low sand, covered with spruce trees, and it has several whale sheds near its west point. Between the shoal water in the bay to the eastward

of the Peninsula, and that which extends from the extremity of Sandy-beach Point, is the narrowest part of the entrance to the harbour, which is 420 fathoms wide from 3 fathoms to 3 fathoms, and upwards of 11 fathoms deep in the centre.

To run into the Harbour of Gaspé attend to the following directions and remarks. On the N.E. side of the N.W. arm, there is a wooded point with low clay cliff, $2\frac{1}{2}$ miles above the Peninsula. This point appears as if it were the extreme on that side, when seen over the end of the Peninsula from a vessel approaching the entrance of the harbour, and is called Point Panard. Now this point (seen over the Peninsula), in one with the inner or north side of the whale sheds before mentioned, is the mark for the northern extreme of the shoal off Sandy-beach Point. The extremity of the spruce trees is as far within the whale sheds, as these last are from the sandy extremity of the Peninsula. On the inner side of Sandy-beach Point, and near to its junction with the mainland, stands a wooden windmill. Keep Point Panard in one with that extremity of the spruce trees on the Peninsula, bearing N. 47° W., until the windmill, just mentioned, comes in one with the west or inner side of the end of Sandy-beach Point, bearing S. $\frac{1}{2}$ W., when you may haul into the anchorage under the point, or steer for the basin, as may be desired.

When beating in, tack by the lead from the N.E. side of the bay, and in the board towards Sandy-beach Point, put the helm down the instant the marks for leading in, just given, come in one.

At night, when neither Sandy-beach Point, nor the Peninsula can be seen, it becomes rather a difficult affair to take a vessel into the harbour. The only guide then is the lead. There should be a hand in each chain, one heaving when the other cries the soundings. Soundings should be first struck on the N.E. side of the bay, about 2 miles outside of the entrance of the harbour, and the edge of the shoal water on that side should be followed, in from 5 to 7 fathoms, until you judge, by the distance run, and the change which take places in the direction of the edge of the bank which you are running upon, that you are approaching the Peninsula and have passed Sandy-beach Point, and can in consequence venture to haul to the southward into the anchorage. To form this judgment accurately, is the diffi-

Gaspé Harbour.

cult part of the process, and as to fail in this would probably cause the loss of the vessel, if the usual heavy swell should be rolling into the bay with S.E. winds, I recommend a vessel rather to trust to her anchors off Douglas Town than to make the attempt. In case of a vessel which has lost her anchors, the directions which I have given may prove of use. Within Sandy-beach Point, that is in the Harbour of Gaspé, the shelter is complete from all winds; the bottom is mud, and the depth nowhere exceeds $11\frac{1}{2}$ fathoms.

Having now given directions to enable the seaman to take his vessel into a place of perfect security, from which he may proceed to the basin, or to any other part of the harbour, with the assistance of the chart, or of a pilot, I shall not swell these remarks by a minute description of the interior of the harbour, which the chart renders unnecessary, and which is not in any way essential to safety.

N.W. Arm.

I shall merely add that the harbour is divided into the N.W. and S.W. arms. The N.W. arm has deep water for nearly 3 miles above the Peninsula, and continues navigable for keeled boats about 3 miles further, where the principal river of the harbour enters the arm between Marsh and Meadow Islands.

S.W. Arm.

The entrance of the S.W. arm is about 180 fathoms wide, and between two sandy points, but the navigable channel is contracted by shoals on either side to about 60 fathoms; and 5 fathoms of water can be carried in. The deep water part of the S.W. arm, which continues for three-quarters of a mile within the entrance,

Basin of Gaspé.

is called the Basin of Gaspé; it has a depth of from 5 to 9 fathoms, over a mud bottom, and is sufficiently capacious to hold a very great number of vessels as securely as in a dock. Boats can ascend this arm by a narrow channel, between shoals, about 3 miles, as in the N.W. arm, and the navigation, for all but canoes or flat-bottomed boats, is terminated in the same manner, by shallow channels between Marsh and Meadow Islands; above this part of the river it becomes contracted and rapid, and the water fresh. A small rivulet in the bay, on the inside of the south point of the entrance of the basin, is the most convenient watering place in the harbour. The Collector of Customs, and the principal families, reside on the shores of the basin. Most of these families, as well as those of the N.W. arm and the harbour generally, are farmers, but several of them are also engaged in

the whale fishery, which they prosecute in small schooners. The *Gaspé Fisheries.* cod fishery is carried on by the people of the bay outside, for the most part in connexion with the Jersey merchants. The great majority of the fishermen are either from Jersey, or descended from the people of that island, whose language they retain.

46. There are regular but weak streams of flood and ebb in the *Tides.* entrances of the harbour and basin. For the time of high water, and rise of the tide, see the Table at the end of the book. In the bay the streams of the tides are so irregular, that I can say nothing certain respecting them. They are, however, usually almost imperceptible, excepting near the shores, and even there they are so weak as to be of little or no consequence to a vessel.

The current down the St. Lawrence runs strongly past Flower-*Outside Current,* pot Rock over towards Flat Island, especially in the ebb tide, which often increases its rate to 2 knots, and this should be remembered by vessels making the bay with a northerly wind. This current, when it meets the swell which so often prevails from *makes a mischievous Sea.* the south and S.E., causes a high, short, and breaking sea, all along the coast from above Cape Rozier to Cape Gaspé, and extending across the entrance of Gaspé Bay. When the wind is light, a vessel becomes quite unmanageable in this sea, and it is extremely dangerous to be caught in it, close to the shore, by a light breeze on the land.

In fine summer weather there is often a sea-breeze blowing *Sea and Land Breezes.* right up the bay from about 9 A.M. until sunset. At such times there is generally a light land-breeze at night down the arms which often extends for several miles out into the bay. In the outer part of the bay, however, it will generally be found to be calm, even at times when a fresh breeze is blowing outside Cape Gaspé and Point Peter. The wind at sea on such occasions is generally from the S.W.

The soundings off this part of the coast will be seen in our *Soundings,* charts for the first time; they will prove of very great use to vessels running up in foggy weather, and had they been previously known, might have saved many vessels. We had an opportunity *effect of neglecting them.* of judging of this last spring, when a large ship, full of emigrants, ran stem on to Whale Head in Gaspé Bay. She was under all sail before a moderate S.E. wind, in a thick fog, and steering N.W.: from which it appears that she must have been running in sound-

Soundings. ings from 20 to 40 fathoms, for at least 4 leagues, and, probably, for 3 hours before she struck. No lead was hove, the existence of the soundings being unknown. The vessel was conceived to be well to the northward, and, consequently, to be steering a safe course. One cast of the lead would have dispelled this delusion, and might have saved the vessel. Let this be a warning to seamen.

Rocky Patches off Cape Gaspé. In the prolongation of the line of Cape Gaspé nearly, there are several rocky patches frequented by the fishermen. They all lie in the same direction from Flower-pot Rock, S.S.E. $\frac{1}{2}$ E. The first is a small patch with 8 fathoms least water, the second has 16 fathoms, and the third 10 fathoms. Their distance from the Rock are seven-eighths, $1\frac{1}{2}$, and 13 miles respectively. There is deep water and irregular soundings between them, and the last mentioned is on the banks of soundings which I have already alluded to, as lying off this coast.

Cape Gaspé to Cape Châte. 47. The bold and high coast between Cape Gaspé and Cape Châte, a distance of 117 miles, will require only a brief notice, as it is free from dangers and destitute of harbours. The mountains everywhere approach the shore, which is steep and rocky, displaying cliffs, often of great height, and without beach. After heavy rains, waterfalls, which are not to be seen at other times, descend from great heights, and small bays, with sandy beach and rapid streams at their heads, occur occasionally; yet these features are not generally so strongly marked as to enable a stranger to make out one part of this coast from another, with facility.

Cape Rozier. CAPE ROZIER, which is nearly 7 miles N. $\frac{1}{2}$ E. from Cape Gaspé, is low, and of greywacke and slate rocks. The shoal water does not extend off it above one-third of a mile, but in the bay to the southward of it, at the distance of $1\frac{3}{4}$ miles, there is a reef which runs out half a mile from the shore. Vessels may find shelter under Cape Rozier from N.W. winds, but the ground is not very good, and the easterly swell that frequently rolls in, renders it a dangerous anchorage. There are fishing establishments on Cape Rozier, and in its vicinity.

Griffin Cove. GRIFFIN COVE and River are $6\frac{1}{2}$ miles N.N.W., nearly, from Cape Rozier. A small bay here affords shelter to the boats of the fishermen, whose houses will be seen around it. There are from 2 to 3 fathoms of water in this bay, over sandy bottom. It is of

no use to shipping, except to obtain supplies of water, wood, and occasionally, fresh provisions.

GREAT FOX RIVER is $11\frac{1}{2}$ miles N.N.W., nearly, from Cape Rozier. It is a mere brook, which enters a small bay about three-quarters of a mile wide, and half a mile deep. Off each point of the bay there are reefs, which diminish the breadth of the entrance to less than a quarter of a mile, and afford shelter to boats, and to very small schooners, in from 2 to $2\frac{1}{2}$ fathoms, over a bottom of fine dark sand. Round the head of the bay there is a fine sandy beach. Outside the reefs, which extend only a very short distance to seaward, there are 15, 18, and 24 fathoms, over a bottom of sand and broken shells, at the distance of a quarter, half, and 1 mile respectively. In fine summer weather a vessel might anchor off this place and obtain water, wood, and supplies of fresh provisions; but it is otherwise of no use to shipping. Seven families of fishermen and farmers resided here when I visited it in 1829, and had plenty of cattle, sheep, and swine.

GREAT POND is a small creek which affords shelter only to boats, and will be known by the houses and stages of the fishermen. It is 16 miles N.W. $\frac{1}{2}$ N. from Great Fox River, and there are no more houses, along the coast, till we arrive at the River St. Anne.

The next place worthy of notice is the MAGDALEN RIVER, which is 24 miles from Great Pond, in a N.W. $\frac{1}{2}$ W. direction, nearly. The mouth of this river is on the N.W. side of a sandy bay, and close under Cape Magdalen its N.W. point, which is rocky, with cliffs of moderate height, and juts out a very short distance from a range of hills which forms the coast line. A reef of rocks, which dry in part at low water, extends from Cape Magdalen, about 200 fathoms to the S.E., parallel to the coast, and shelters the entrance of the river from the northerly winds. The river is 30 yards wide at the entrance, and 7 feet deep at low water; within, for a very short distance, there are 10 feet over a clean bottom of fine sand. Further up, the river becomes shallow and rapid, winding its way through a romantic valley between the mountains. Thirteen feet of water can be carried into this river at spring tides, so that it is a considerable stream, and is occasionally visited by schooners from 30 to 80 tons, which warp in when the sea is smooth and the weather fine. The bay is not deep, being merely a gentle curve with a sandy beach for about a

*Anchorage off
Magdalen
River.*

mile to the S.E. of the river. Vessels may anchor here in 7 fathoms, over a bottom of sand, fine gravel, and broken shells, at the distance of three-quarters of a mile from the sandy beach, and from the N.W. point bearing W.N.W. The shelter is from W.N.W., round by S.W., and S. to E.S.E., but it is only a fine weather anchorage, which may be of use to vessels wanting wood and water.

Tides.

During two occasions, on which I anchored here, I observed a regular alternation of the stream of flood and ebb. The flood extended about $1\frac{1}{2}$ miles from the shore, running 1 knot, and at the line of junction with the almost constant downward current there was a strong ripple.

*Mont Louis
River.*

MONT LOUIS RIVER is 16 miles further along the coast to the W.N.W. It is a much smaller stream than the Magdalen River, being 20 yards wide at the entrance, and capable only of admitting a small boat at low water. There are 7 feet in the entrance at high water, and for a short distance within. The small bay, with sandy beach at its head, into which this river falls, is a mile wide, and nearly three-quarters of a mile deep. Vessels may anchor in it during fine weather, in from 8 to 16 fathoms, mud bottom, nearer the west than the east side. The holding ground is excellent: but since a vessel ought not to be more than 300 fathoms distant from the west side of the bay, there is not much room to work out, and therefore it would be dangerous for a large vessel to be caught there by a wind on the land. Small vessels, or ships having occasion to stop for a few hours for wood or water, may safely anchor there in fine weather, and will find shelter in all winds, from W.N.W. round by S. to E.S.E. Mont Louis River may be thus recognised. In a vessel off this part of the coast, four well marked openings will be seen in the high land in a space of 10 miles. The eastern opening is Grande Matte River, the next westward is Mont Louis River, and the two others Claude and Pierre Rivers. None of them afford good anchorage excepting Mont Louis. On approaching near the shore, an attention to the cliffs, shown in the chart, will point out Mont Louis River beyond a doubt.

*Mont Louis
Bay.**Four openings
in the land.**Cape St. Anne.*

There is nothing worthy of remark for 26 miles further westward to Cape St. Anne, after which the mountains begin to recede a little from the shore, and to diminish in height. There is, however, another range of mountains in the rear of the coast, as will

be seen in the chart. These are the St. Anne mountains, which *St. Anne Mountains.* can be seen from a distance of 80 or 90 miles, under favourable circumstances; and their highest peak, which is about 14 miles behind Cape Chatte, is 3970 feet in height above the sea. These are, therefore, the highest mountains in British North America.

ST. ANNE RIVER, which is 6 miles west of the high cape of *St. Anne River.* the same name, and 10 miles east of Cape Chatte, can be entered by small schooners at high water. It flows into the sea through the sandy beach of a bay which affords very indifferent anchorage, the depth of water being too great, excepting at a less distance from the shore than would be considered prudent for any but small vessels. Several families reside here, from whom supplies of provisions can in general be obtained, and also from those at Cape Chatte River.

CHATTE RIVER, $2\frac{1}{4}$ miles eastward of Cape Chatte, is much *Chatte River.* smaller than the River St. Anne, and enters a much smaller sandy bay, affording no anchorage for ships. The east point of this bay, 2 miles eastward of the river, is a low spit with a reef off it half *Reef.* a mile. Small coasting schooners occasionally anchor under it in westerly winds.

CAPE CHATTE, when seen from the eastward or westward, so *Cape Chatte.* that it appears as the extreme point, can easily be distinguished, being a round hill separated from, but of less height, than the land behind it.

The long line of coast, which has formed the subject of this *Fogs dangerous on this bold coast.* article, and been found so free from danger, is nevertheless to be guarded against in dark foggy nights, since the water is everywhere along it, too deep to afford sufficient warning by the lead for the safety of vessels. The shore along its whole extent, excepting in some of the bays, is of highly inclined slate and greywacke rocks, which would cut through a vessel's bottom in a very short time; and such is the impracticable nature of the country, that those who might escape to shore would run great risk of perishing from want before they could reach a settlement.

48. The south coast of the Estuary from Cape Chatte to Matan, *Cape Chatte to Matan.* is straight, bold, and of the same rocks as that which has been described in the last article. Although not a high coast, it is still of considerable elevation above the sea, and the St. Anne mountains continue in the rear of it, at the distance of about 5

leagues, to their south-western termination, which is 15 miles south of Cape Balance, the last being 25 miles westward of Cape Chatte. Several detached hills will be seen further to the westward, which are also at a considerable distance from the coast.

Paps of Matan. Two of these have been named the Paps of Matan, though they can with difficulty be made out when bearing S.W.; on any other bearing it is still less easy to distinguish them, but they are of no use except to enable a vessel, obtaining a sight of land, to judge how far she is up the Estuary.

Capuchin Cove. Capuchin Cove, and another cove on the west side of Cape Michaux, afford shelter to boats. Settlements commence at Little Matan, a small stream 3 miles eastward of the River Matan.

Matan River. The RIVER MATAN is a fine stream 33 miles W. $\frac{1}{2}$ S. from Cape Chatte. It is reported to have its source in a lake of considerable dimensions, about 60 miles, following the stream, inland. The depth of water over the bar is usually 4 feet at low water, and 15 at high water spring tides. The rise of the tides is, however, very irregular, and although there is often 12 feet at high water neap tides, yet I have seen as little as 10 feet. The depth of water seems to depend so much upon the winds which prevail in the Estuary, that it is impossible to calculate it

Tides.

at any time exactly. In the last days of July the morning tides rose 2 and 3 feet higher than the evening tides of the same day. Easterly winds were observed to cause high tides, and westerly winds the contrary.

Entrance of Matan River. The channel is very narrow, and there are several large boulder stones in it, lying on the sand, which diminish the depth 2 feet, and are extremely dangerous when there is any swell. The bar is continually shifting from the effects of gales of wind, so that I can give no directions for sailing in. There are pilots residing here, and no vessel should attempt the entrance without one. The bar when I was there ran out in a circular form from the east point of entrance, and was met so nearly by another point of sand, running out from the small isolated cliff on the west point of entrance, as to leave only a very narrow channel. The bar dried at low water, and no part of it extended more than 300 fathoms outside the entrance of the river. Inside the bar the entrance, between two sandy points, is not more than 30 fathoms wide, and a very rapid current runs out during the ebb tide. There is not room enough for a vessel to lie safely afloat inside,

but, nevertheless, considered as a tide harbour, it is a useful place to coasting schooners, which ground at half tide on a good bottom of mud and stones. To a vessel which had lost her anchors, or which had received injury, this river would afford a place of refuge in which she could be safely repaired and refitted. The sandy beach extends about a third of a mile to the eastward of the entrance, and incloses a large space dry at low water, with the exception of the narrow and rapid channel of the river, which is full of stones. The tides ascends about a mile to a rapid over a ledge of rocks, above which the stream is swift, shallow, and navigable for canoes, to the lake before mentioned.

Outside the bar there is anchorage in 5 fathoms half a mile off-shore, and in 10 fathoms a little further out, the bottom being of sand and clay. *Outer Anchorage.*

Supplies of provisions can usually be obtained at this river; *Supplies.* and it will be easily made out from a vessel, since the entrance shows plainly. The clifty mound on the west side of the entrance, and the buildings, will also serve to point it out.

Matan is the name of a seignory containing about 500 inhabitants, most of whom live by the combined means of fishing, farming, and piloting. The soil is good, and gives good crops of wheat and other grain, excepting in bad seasons, which have been very frequent of late years, and in which the crops sometimes totally fail. *Matan Seignory.*

The coast from Matan to Metis is low, rocky, wooded, unbroken, and may be approached with care by the lead, the bank of soundings becoming gradually wider as we proceed to the westward. (Art. 25.) *Matan to Metis.*

LITTLE METIS BAY is 23 miles W. $\frac{3}{4}$ S., nearly, from Matan. It is small and divided into two rocky coves, which are open to the eastward, and dry at low water. *Little Metis Bay.*

Little Metis River, a small stream, is at the head of the southern cove. There are several buildings, and a fishing establishment on Metis Point, the outer point of the bay. A reef which is very bold on its north side, runs out from this point nearly three-quarters of a mile to the eastward, and enables small vessels to remain at anchor, in 3 fathoms, over mud bottom, with the wind as far to the northward as N.W. Some of its rocks are always above water. In this berth vessels lie midway between the eastern end of the reef, and a large Round Rock near the *Little Metis River.*

Oyster Anchorage.

shore on the S.E. side of the bay. Larger vessels may anchor further out in 5 or 6 fathoms of water, but not in the stream of the reef, where the ground is foul and rocky.

Round Rock.

The east end of the reef may be passed by the lead in 4 fathoms, or with the Round Rock bearing S.E., but large vessels had better not bring it to bear to the eastward of S.S.E. This rock, which is about $1\frac{1}{2}$ miles E.S.E. from the reef off the outer point of the bay, will serve to point out Little Metis to strangers. It cannot be mistaken for Grand Metis with our charts, since there is no resemblance in the shapes of the bays. Neither place can be easily made out from a greater distance than 5 or 6 miles, because the Points are very low.

Grand Metis Bay.

GRAND METIS BAY is separated from Little Metis by Metis Point. Grand Metis River, a small stream 5 miles westward of Little Metis, is near the west end of the bay, and is nearly dry outside of the very narrow entrance at low water. The bay is rather more than 3 miles wide, and three-quarters of a mile deep; but it is all shoal. Small vessels may anchor in $3\frac{1}{2}$ or 4 fathoms, under its east point, close to the edge of the shoal water, and in tolerable shelter from winds along the coast, but there is no shelter for shipping. Nevertheless, vessels lie here all the summer months for the purpose of taking in timber. They are usually moored in 6 fathoms, at low water, over mud bottom, and with the river bearing about S.S.W., distant $1\frac{1}{2}$ miles. In this position they are half a mile from the 3 fathoms edge of the shoal water which extends from the shore; and as they are outside of the line joining the points of the bay, they are exposed to the prevailing winds along the coast, and must ride very heavily at times. There is, however, seldom much sea with these winds so close in shore, and the northerly winds seldom blow strong until September. After the commencement of that month, I consider this a dangerous anchorage, but at other times, and in fine weather, vessels may safely anchor anywhere off the bay in from 6 to 12 fathoms; the bottom being everywhere good, and plenty of room to get under weigh.

Cock Cove.

COCK COVE affords good anchorage for schooners, in 3 fathoms at low water, well sheltered from the winds along the coast. The summit of Mount Camille, already mentioned (art. 28), bears from the west point of Cock Cove S.E. by S., 8 miles, and will serve to point out its position to a stranger.

It may be remarked here, that large vessels may anchor, in *Anchorage all along this Coast.* fine weather, all along the coast from Metis to Green Island.

FATHER POINT bears from the west point of Grand Metis Bay *Father Point.* W. by S. $\frac{1}{2}$ S., $14\frac{1}{2}$ miles. It is low, covered with houses, and the regular rendezvous of the pilots, many of whom reside *Pilots.* there.

The eastern point of Barnaby Island is 3 miles W. by S. from Father Point, and between them is the anchorage or Road of *Rimousky Road.* Rimousky, where vessels ride throughout the summer to take in cargoes of lumber. They lie moored in 4 or 5 fathoms at low water, with excellent holding ground, and sheltered from W. by N. round by S. to E.N.E. The best sheltered berth is with the eastern point of Barnaby Island bearing W. by N., Rimousky church S.S.W. $\frac{1}{2}$ W., and Father Point E.N.E.: the depth will then be 4 fathoms at low water spring tides over mud bottom. Small vessels may anchor further to the westward in 3 fathoms at low water, with the east end of the rocks, off the eastern point of Barnaby Island, bearing N.W. by W., and distant a quarter of a mile. The reef does not extend above a quarter of a mile off the eastern point of Barnaby Island, and may be passed by the lead in 4 fathoms.

BARNABY ISLAND is $3\frac{1}{2}$ miles long, and very narrow: it is of *Barnaby Island.* slate and greywacke rocks, like all the coast and islands on this side of the estuary. It is low, wooded, and uninhabited. In the interior of the island there is a long pond of fresh, but not good water, which last must be obtained from the River of Rimousky.

The channel between the island and Rimousky is dry at low water. From 7 to 12 feet can be carried through it at high water, according as it is neap or spring tide, but at no time should a vessel drawing more than 8 feet attempt this passage, since there are rocks and large stones here and there, and also fish stakes.

The church of Rimousky to the eastward of the river, and many *Rimousky Church.* houses, will be seen directly opposite the island.

Off the outside of Barnaby Island there is a 3-fathom shoal, *Barnaby Shoal.* extending out fully two-thirds of a mile, and the reef off its western end runs out in the direction of the island more than three-quarters of a mile. Between the western end of Barnaby Island and the mainland there is a large high and bare Rock,

Barnaby Road. which is distant from the island about two-thirds of a mile.

Midway between the western points of the island and Bare Rock, bearing north and south from each other, there are 2 fathoms at low water, in Barnaby Road, over muddy bottom, affording good anchorage to small vessels, in all but westerly winds. Rimousky church in one with the eastern end of the rock will lead over the tail of the reef off the west end of Barnaby, and into this anchorage.

*Bearings from
Barnaby
Island.*

49. From the eastern point of Barnaby Island to the eastern point of Bicquette Island the course is west, and distance $14\frac{1}{2}$ miles. From the western point of Barnaby Island to the eastern end of the S.E. reef off the island of Bic the course is also west, and distance $8\frac{1}{4}$ miles. From the western point of Barnaby Island to the N.W. extremity of Cape Arignole the course is W.S.W. $\frac{3}{4}$ W., and distance 10 miles.

Ha-Ha Bay.

There are bays on either side of Cape Arignole, but they dry at low water. The bay on the west side of the Cape is named Ha-Ha Bay. With easterly winds, there is excellent anchorage off its entrance in 4 fathoms at low water, and further in for small vessels in 3 fathoms; but it is seldom used, because the equally safe and more roomy anchorage under Bic is justly preferred.

Arignole Reef.

Arignole Reef consists of two rocks lying across the mouth of the bay, on the east side of the Cape. The west end of the western rock of this reef is always above water, and bears south $2\frac{1}{2}$ miles from the east end of the S.E. reef of Bic, and E. $\frac{1}{4}$ N. $1\frac{1}{2}$ miles, from the N.W. extremity of Cape Arignole; but it is distant only a quarter of a mile from the rocks off the east side of the Cape. This western rock is a quarter of a mile long, and very narrow. The eastern rock is small, covered in high tides, and one-third of a mile east from the other. These two rocks are very bold to the northward, and there are 5 or 6 fathoms of water between them. Vessels may pass between them and the main by keeping close to them, but can seldom have occasion to try so dangerous a passage.

*Old Bic Har-
bour.*

The west point of Old Bic Harbour bears E.S.E. $\frac{1}{2}$ E., 1 mile from the east end of the reef. This harbour, as it is called, dries

Bicoque Rocks.

at low water, and has many rocks in it. Two round and high rocky islets, called the Bicoques, will be seen extending to the westward of its east point, and diminishing the breadth of the entrance to two-thirds of a mile.

Midway between these rocky islets and the west point of the *Old Bic Road*, harbour small vessels may anchor in Old Bic Road in 3 fathoms at low water, with muddy bottom, and with the point bearing west, distant one-third of a mile. To run into this anchorage from the N.W., keep the westernmost of the two rocky islets its own breadth open to the eastward of the west point of the harbour, and you will clear the eastern rock of the Cape Arignole reef, which is the only danger in the way.

The summit of the high land southward of Cape Arignole, *High land of Bic*, otherwise called the high land of Bic, 1234 feet above the sea at high water, bears S.W. by S. from the N.W. extremity of the Cape, distant nearly $2\frac{1}{2}$ miles. The hills in this neighbourhood are composed of high and narrow ridges of greywacke rocks, parallel to the coast, and to each other, and declining gradually in elevation on either side of the summit just mentioned. When these ridges are seen nearly end on, from either up or down the Estuary, they present an outline so remarkable that this land can be made out from very great distances.

BIC ISLAND lies directly off Cape Arignole, at the distance *Bic Island*, of nearly $2\frac{1}{2}$ miles, and is about 3 miles long, without including the reefs, in a direction parallel to the coast, and 1 mile broad. Its shores are of slate rocks; it is thickly wooded, uninhabited, and in height does not exceed 150 feet above the sea.

Supplies of water can only be obtained from the bay between *Water* the east and S.E. points of the island, and not always there in dry seasons. But vessels may supply themselves from the river in the S.E. corner of Old Bic Harbour, or from a stream on the west side of a small bay of the mainland, 4 miles westward of Cape Arignole.

BICQUETTE ISLAND, three-quarters of a mile to the northward *Bicquette Island*, of Bic, is half a mile long, by a quarter of a mile broad, and about 100 feet high above the sea. Several large rocks above water extend one-third of a mile to the east and S.E. of the island, and diminish the breadth of the channel between it and Bic to little more than half a mile. Off the west end of Bicquette, *West Reef*, in a S.W. by W. $\frac{1}{2}$ W. direction, there are two large rocks always above water, and a third which covers at high water; these lie nearly in a line, and extend to the distance of a mile from the island.

The N.W. REEF OF BICQUETTE is the greatest danger, lying *N.W. Reef*.

*Bicquette
N.W. Reef.*

*Clearing
Mark.*

*Bicquette
Channel.*

*Bic Island,
S.E. Reef.*

*Narrow 5
fathoms
Channel.*

due west from the west end of the island, and at the distance of $1\frac{1}{2}$ miles. The cross mark for it is the west end of Bic in one with the N.W. point of Ha-Ha Bay, bearing S.S.E. $\frac{3}{4}$ E.; but this last-named point can seldom be plainly made out, in consequence of the high land behind it. In approaching this reef from the westward, the north extremity of Cape Arignole should not be shut in behind the west point of Bic. This reef is composed of two rocks about 150 fathoms long, and which just cover at high water: both it and Bicquette are very bold to the northward (art. 25). There is deep water all along the line from the north side of Bicquette to this reef, and also between the latter and the rocks to the S.E. of it, but these are dangerous passages, which ought not to be generally tried, though it is useful to know of their existence in case of emergency.

I must apply the same remarks to Bicquette Channel, between Bic and that island, which was not known before this survey: there are no leading marks for running through, but it may easily be done with the assistance of our charts in case of necessity. The south-western reef off Bicquette is most in the way, and there are also two small round rocks on the Bic side, 200 fathoms off shore, and bearing nearly south from the west end of Bicquette. To avoid the first of these dangers, do not bring the south extremity of the rocks off the S.E. side of Bicquette to bear to the eastward of E.N.E. $\frac{1}{2}$ E.; and if you do not bring the north side of Bic, near its east end, to bear to the northward of E. $\frac{1}{2}$ N., you will clear the second, which, however, always shows, excepting in very high tides. These directions are, however, insufficient without the chart, which must be carefully consulted, for this is an intricate and dangerous place. The best time to run through is at low water, when all the dangers show, and a vessel, keeping in mid-channel between them, will have from $9\frac{1}{2}$ to 5 fathoms, with irregular soundings and foul ground occasionally.

Bic has another set of dangers of its own. The first of these is the S.E. Reef, which extends out from the S.E. point of the island to the distance of nearly $1\frac{1}{2}$ miles, in an E. by S. direction. The outer part of this reef is formed of three rocks lying in a straight line, and always above water. The two easternmost are the largest, and are nearly joined together, whilst the westernmost of the three is detached, so as to leave a channel through the reef 150

fathoms wide, and 5 fathoms deep. Large vessels should not attempt to pass between these rocks, or between them and Bic, for the tides are rendered irregular by the uneven bottom, and there is much foul ground about, as will be seen by the chart. Small schooners can pass on either side of the western rock, keeping close to it, if they pass to the westward. The shoal water does not extend beyond a cable's length from the east end of the S.E. reef: the rocks above water are bold, both on their north and south sides. The inner part of the reef, extending under water from the S.E. point of Bic, reaches further to the southward than the direction of the rocks, and must be avoided by not bringing the south side of Bic to bear to the southward of W. by S.

The N.E. REEF of Bic is a small patch of black rocks, which shows at low water, lying N.E. by E., 400 fathoms from the N.E. point of the island, and N.W. $\frac{1}{2}$ W., rather more than one mile from the east end of the S.E. reef. To clear this reef to the eastward, keep both the rocky islets on the east side of Old Bic Harbour open to the eastward of the S.E. reef, bearing nothing to the eastward of S.E. by S. *N. E. Reef of Bic.* *Clearing Mark.*

The WEST GROUNDS of Bic are an extensive flat of slate, which partly dries at low water. The outer point of these Grounds, in 3 fathoms, bears W. $\frac{1}{2}$ S. from the west point of the island, distant nearly three-quarters of a mile; and they may be approached by the lead, as nearly as 5 fathoms, at low water. *W. Grounds of Bic.*

The ALCIDE Rock has no connexion with Bic, but as it is extremely dangerous, and lies much in the way of vessels passing through the Bic Channel, between that island and the main land, I shall notice it here. It is a small rock, about 6 feet long, and 2 wide, having 4 feet water on it at low water, and standing on a small rocky shoal, 100 fathoms long, parallel to the coast, and about half as wide. This shoal is so bold all round that there is no warning whatever by the lead. It lies due S.W. from the west point of Bic, at the distance of nearly $3\frac{1}{4}$ miles. From the N.W. extremity of Cape Arignole it bears W. $\frac{1}{2}$ S., distant 5 miles; and it is rather more than $1\frac{1}{4}$ miles distant from the shore to the southward. There is a close leading mark for clearing this Rock, but if Mount Camille be not entirely shut in behind Cape Arignole, vessels will be in no danger from it. *Alcide Rock.*

The above mark, together with the bearings, which I have

Bic Channel. given, will be a sufficient guide to vessels beating through between Bic and the main, in their board to the southward. In their board to the northward, towards the West Grounds of Bic, vessels must not shut in the S.E. reef behind the south side of Bic. All along the south side of Bic, and the S.E. reef, they may safely stand in to 7 fathoms at low water, not, however, without remembering what I have said respecting the inner part of the latter. Cape Arignole and its reef are quite bold to the northward; and further to the eastward, between Old Bic Harbour and Barnaby Island, vessels may safely stand in to $4\frac{1}{2}$ fathoms at low water: the ground is all clean sand and mud bottom, with excellent anchorage in every part.

With this full description of the dangers around Bic and Bicquette, and the assistance of our charts, vessels will have no difficulty in passing on either side of these islands in clear weather: and as I have already given directions for running past Bicquette at night, or in foggy weather (art. 25), it therefore only remains to point out the best places for anchoring, and to give directions for approaching them.

*Anchorage off
Bic recom-
mended in
foggy weather.*

There is excellent anchorage under either end of Bic, and also between it and the main land, according to the wind; and vessels, which may be met by an easterly wind, had better anchor than attempt to beat down the Estuary in the long and foggy nights of the fall of the year. More shipwrecks have arisen in consequence of vessels obstinately endeavouring to beat down against an easterly gale, with its accompanying fog, than from any other cause, and yet all that they can gain by such a course might be run in a few hours of fair wind.

*Directions for
Bic Anchorage.*

A vessel being to the north-eastward of Bic, with the first of an easterly gale, should bear up before the weather becomes thick, and steer for Bic Channel. The S.E. reef will be seen, and vessels may pass a quarter of a mile to the southward of it, or by the lead, coming no nearer to it and the south side of Bic than 7 fathoms at low water. Having run to the westward $1\frac{1}{2}$ miles past the west end of Bic, haul to the northward, with the lead going, and taking care not to approach the West Grounds nearer than 6 fathoms at low water, until the south side of Bic bears E. $\frac{1}{2}$ N., and the north side N.E. by E. With these bearings, anchor with 7 fathoms at low water, over muddy bottom. In this position you will have the S.E. reef shut in

behind the south side of Bic: Bicquette and its rocks will be *Bic Anchorage*. all open to the N.W. of Bic: the N.W. reef of Bicquette will bear N. $\frac{1}{2}$ E., rather more than $1\frac{1}{2}$ miles; you will be fully half a mile to the westward of the 3 fathom mark on the outer extremity of the West Grounds of Bic, and consequently will have plenty of room to get under weigh with the first of the westerly wind, when you should cast to the southward, and run through Bic Channel to the eastward. A wind from the southward, together with the set of the ebb tide, might perhaps render it preferable to run out to the northward, round the N.W. reef of Bicquette; in which case do not go to the eastward into less than 8 fathoms, at low water, nor shut in the north extremity of Cape Arignole behind the west point of Bic.

If it be night, and yet not so dark but that the principal *Taking Bic Anchorage at night* features of the land can be made out, although it might be dangerous to attempt to make the low S.E. reef, another mode of proceeding may be adopted, under the circumstances above contemplated, and supposing the position of the vessel to be known. In that case, run in to the southward, towards the main land, half way between Barnaby Island and Bic, until you shoal to 5 fathoms, at low water; then steer west *by compass, but corrected for deviation*, and you will deepen your water gradually. When you arrive at 9 fathoms you will be past Old Bic, and will probably see the opening of that harbour to the southward of you. When you arrive at 11 or 12 fathoms, you will be past the Cape Arignole Reef, and will soon begin to shoal again on the Bic side of the channel. If it be too dark to see the island, go no nearer than 7 fathoms. When you judge yourself far enough to the westward, haul gradually to the northward into the stream of the island, and anchor as near the position previously pointed out as you can. It is not, however, necessary that you should be in that position, although it has been recommended as the best sheltered; for you may anchor, and will ride easily, anywhere under and within 3 miles of the island, in 8, 9, or 10 fathoms at low water; and large and heavy ships, would perhaps wish to lie further off than I have recommended.

In the case of a vessel to the northward of Bic, and wishing *Approaching Bic Anchorage from the northward* to run to the same anchorage from the N.W., so as to pass to the westward of the N.W. reef of Bicquette, run to the westward; going no nearer to Bicquette and the N.W. reef than

30 fathoms, till the extremity of Cape Arignole becomes open to the S.W. of Bic, bearing S.E. $\frac{1}{2}$ E.: then haul to the southward, going no nearer to the reefs of Bicquette than 8 fathoms, and anchor as before directed.

Taking Bic Anchorage in thick weather.

Should the weather be so thick that no land can be seen, either mode of proceeding may be adopted. I, however, recommend the latter as attended with less risk; but in such case, the distance run must be carefully attended to, due allowance made for the tide, and the soundings in the chart consulted. The principal thing is to make sure that you have run far enough to the westward, to insure clearing the N.W. reef, when you haul to the southward, for whether you anchor within 1 or 3 miles of Bic, will make no other difference than that the water will be smoother at the less than at the greater distance.

Bic Eastern Anchorage with Westerly winds.

Vessels running down from the westward to anchor under Bic should keep Mount Camille open to the northward of Cape Arignole to clear the Alcide Rock. Then running along the south side of Bic, and the S.E. reef, they should haul round the east point of the latter, no nearer than a quarter of a mile, nor than 8 fathoms, and anchor with the east point of the S.E. reef bearing S.W. $\frac{1}{2}$ S., three-quarters of a mile, in 10 fathoms at low water over clay bottom. The N.E. point of Bic will then bear west a little southerly, the N.E. point of Bicquette W. $\frac{3}{4}$ N., and the whole of Cape Arignole will be just open to the southward of the S.E. reef. Large ships may anchor further off to the eastward if they please, but in the berth which I have recommended, a vessel will have plenty of room to cast to the southward, and weather the S.E. reef, in case of a sudden shift of wind. Should she, however, prefer going to the northward round Bicquette, let her beware of the N.E. reef of Bic, the position of which has been already described, and also, particularly if the wind be light, of the indraught of the flood tide between Bic and Bicquette.

Anchorage in Bic Channel with Northerly winds.

With northerly winds vessels may anchor anywhere in Bic Channel, but the best berth is off a small sandy point, nearly in the middle of the south side of Bic Island, in $8\frac{1}{2}$ or 9 fathoms at low water, over muddy bottom, at three-quarters of a mile off shore.

Tides near Bic Island.

To the westward of Bic the first of the flood comes from the N.E., but there is very little stream of flood in neap tides between Bic and the main land, excepting close to the latter.

In spring tides it runs through the channel at the average rate of $1\frac{1}{2}$ knots, being strongest near the main land. It also runs between Bic and Bicquette, but the stream extends only a very short distance outside the latter island. *Tides near Bic Island.*

The stream of flood continues its course close along the main land, passing inside, and also very close outside, of the Razades, Basque, and Apple Island; but nowhere extending a sufficient distance off shore to be of use to ships beating to the westward much below Green Island. That part of the stream of flood which passes further out towards Bic, and also that which passes between Bic and Bicquette, runs at its full rate only until half flood, after which it becomes gradually weaker, turning to the N.W., round the west end of the island, and finally, to the north and N.E., towards the end of the tide. *Stream of the Flood.*

The stream of flood becomes weaker, and of less duration, as we proceed to the westward of the islands. Half way between Bic and the Razades there is slack water for about an hour at the end of the ebb; after which a weak flood makes during the first quarter of that tide, at the rate of a quarter of a knot; and this is succeeded by the eddy flood at the rate of $1\frac{1}{2}$ knots, or $2\frac{1}{2}$ at the edge of the Bank of Soundings, which comes from the westward, running in the same direction as the ebb during the remainder of the flood tide. *Eddy Flood.*

From these remarks it will be seen, that vessels will make little way to windward against a westerly wind on the Bank of Soundings between Bic and the Razades; and indeed, all the way to Green Island.

The set of the latter part of the flood to the northward past the west end of Bic should be remembered by vessels weighing from the western anchorage, or approaching the island with light winds, especially in the night, or thick weather.

The first of the ebb sets off shore, or from the southward, and this is more particularly remarkable at the eastern anchorage, but it only lasts for a very short time, after which the stream runs fairly between the islands, and along the coast to the eastward, for the remainder of the tide. Its rate, in westerly winds, varies from 2 to $2\frac{1}{2}$ knots, according as it is neap or spring tide, but it does not run so strongly in easterly winds. *Stream of the Ebb.*

The chart will show how extensive the south bank is, both to the eastward and westward of Bic and Bicquette, and the assistance *South Bank.*

South Bank. which the soundings on it may afford to vessels at night, or in fog, will be evident. If vessels on approaching those islands from either direction, will but use their leads in reference to the soundings in the chart, and attend to the directions given (art. 25), they can scarcely run foul of Bicquette, or its reefs, as has so often occurred in times past.

Edge of the South Bank.

It has been mentioned (art. 25), that the 30 fathoms edge of the south bank is 7 miles north of Barnaby Island, and $1\frac{1}{2}$ miles north of the N.W. reef of Bicquette. Between those points the edge of the bank continues in a slightly undulating line. Everywhere within that line there is much less water, and to the northward of the South bank, in every part, there is no bottom with from 60 to 80 fathoms of line, quite over to the north coast. The 30 fathoms edge of the bank is $4\frac{1}{2}$ miles north of the N.E. Razade Islet, and is nearly straight from that point eastward to off the N.W. reef of Bicquette.

From Bic Island to the Razade Islets.

To the westward the south bank becomes gradually wider, its northern edge pursuing a direction from off the Razades towards the north side of the Red-Islet Reef. There is nowhere more than 36 fathoms at low water upon it, until we arrive within 2 miles of the line joining the N.E. extremities of the Red-Islet, and Green Island Reefs, and this increase in the depth of water is a valuable indication to a vessel approaching that dangerous pass in thick weather, when the Green Island light cannot be seen. There is anchorage in 10 or 12 fathoms, with good holding ground, all along the south coast from Bic to Green Island.

The coast of the main land between Bic and the Razades is high and rocky. With the exception of the Alcide Rock already noticed, it is free from danger to small vessels, which may stand close in: but ships should not stand in further than 7 fathoms at low, and 9 fathoms at high water, because of a long ridge of rocky ground, extending 5 miles to the E.N.E. from the N.E. Razade Islet, with 17 feet least water near its eastern end. To clear every part of this ridge, keep Basque Island its own breadth open to the northward of the N.E. Razade.

The Razades.

50. The RAZADE ISLETS are two large rocks about a quarter of a mile long; they are low, bare of trees, and bear from each other S.W. $\frac{1}{4}$ W., $1\frac{1}{2}$ miles. The north-easternmost of these Islets bears from the N.W. reef of Bicquette S.W. $\frac{3}{4}$ W., nearly 15 miles,

and is distant $1\frac{1}{2}$ miles from the main land to the southward. There is no passage for vessels between them and the shore.

BASQUE ISLAND is 5 miles W.S.W. from the N.E. Razade Islet, *Basque Island.* $1\frac{1}{2}$ miles long parallel to the coast, and 200 fathoms wide. Its greatest height above the sea does not exceed 100 feet: it is rocky, wooded, uninhabited, and there is no passage for ships between it and the shore, from which it is distant 2 miles.

Near the S.W. end of this island a sandy spit runs out, a *Basque Spit, and deep hole.* quarter of a mile to the southward. Close off the end of this spit, there is a long and narrow hole 4 or 5 fathoms deep at low water, in which small craft may be secured.

The shoal water extends half a mile to the northward of *Basque Reef,* Basque Island, and there is a reef of rocks to the N.W. and west of its west point. On the western extremity of this reef, and about 600 fathoms distant from the island, is a round rock which *and half tide* shows at half tide. *Rock.*

APPLE ISLAND is W.S.W. $\frac{1}{2}$ W., $2\frac{3}{4}$ miles from Basque Island. *Apple Island.* It is formed by one principal and several smaller rocks; the whole covering a space one mile long parallel to the coast, by 150 fathoms wide. It is 30 or 40 feet above the sea at high water, without any trees, and distant $2\frac{1}{2}$ miles from the nearest point of main land. There is no passage for ships between it and the shore, but its north side is very bold, there being 4 fathoms at the distance of a cable's length.

The east end of **GREEN ISLAND** is a long and narrow point of *Green Island.* rocks, always above water, and running out more than half a mile from the trees towards Apple Island, which is distant from it $2\frac{3}{4}$ miles in an E.N.E. direction. Half this distance towards Apple Island is occupied by reefs of slate which dry at low water. In the remainder, there are a few feet of water, affording a passage for very small schooners, which run in between Green Island and the main at high water. And here I may mention, that the line of shoal water is continuous from each of these islands to the other, and may be safely approached with care to 7 fathoms at low, or 10 fathoms at high water; as may also the islands.

GREEN ISLAND LIGHTHOUSE stands on the north point of the island, nearly 2 miles from the eastern extremity of the rocks above water, off its east point; and W.S.W. $\frac{1}{2}$ W., $4\frac{1}{2}$ miles, from Apple Island. It shows a fixed light, 60 feet above the sea, and can be seen in clear weather, and in the ordinary state of the refraction, *Green Island Lighthouse.*

Green Island. from the distance of about 12, 14, or 17 miles, according as the height of the observer's eye is 10, 20, or 60 feet. The tower is square, white, and 40 feet high. Behind the Lighthouse, at the distance of about a quarter of a mile, and bearing S.S.E. $\frac{1}{2}$ E. from it, there is a white beacon for leading clear of the tail of the Red-Islet Reef, as described in art. 28.

*White Beacon
for Red-Islet.*

*Green Island
Reef.*

The GREEN ISLAND REEF, which is extremely dangerous, runs out from the lighthouse N.N.E. $\frac{1}{2}$ E., $1\frac{1}{2}$ miles, to the 3 fathom mark. From its N.E. extremity it trends, with a serrated outline, E. by S., till it joins the shoal water connecting Green and Apple Islands. Its N.W. side is straight, running S.W. by S. from its N.E. extremity, to the shore close to the westward of the lighthouse, off which it extends only 200 fathoms to the N.W. Its shape is therefore irregularly triangular, and the rocks on it dry at low water, nearly three-quarters of a mile out from the high water mark.

Extent.

*Steep to, except
on eastern side,*

On the eastern side this reef may be safely approached by the lead to 7 or even 6 fathoms at low water, but on the north, N.W., and west sides, there is no bottom with the hand lead until close to it. Half a mile north, and N.W. of it, there are between 20 and 30 fathoms of water. At the distance of one mile N.W. from its N.E. extremity, there are between 40 and 50 fathoms; and at the distance of $1\frac{1}{2}$ miles, in the same direction, there is no bottom for a short space with 50 fathoms of line.

*yet the Lead is
the only guide.*

Deep as the water is to the northward of this dangerous reef, there is no other guide, in a thick fog when the light cannot be seen, but the soundings: yet it will never do to lose command of the vessel by rounding to, in the rapid ebb tide, (which sets upon the reef at the rate of 5 knots,) for the purpose of getting bottom in the usual way by the common deep sea lead. Here then it is that Massey's patent sounding machine becomes of invaluable service to the seaman, enabling him to obtain correct soundings despite of the rapid tide, and without interfering with the course and rate of his vessel.

Ebb sets over it.

Clearing Mark.

To clear Green Island Reef, in the day time and clear weather, keep the summit of the high land to the southward of Cape Arignole (or the high land of Bic) open to the northward of Basque Island.

*Green Island.
Road.*

There is excellent anchorage in westerly winds under the Green Island Reef, and it is the general rendezvous of vessels waiting for

the flood, to beat through between Green and Red Islands. But as *Green Island*. the first of the flood comes from the northward, and sets on the shoals, vessels had better not anchor with the light bearing to the westward of S.W. $\frac{1}{2}$ W., or in less than 7 fathoms at low water. With that depth, on that bearing, they will be $2\frac{1}{2}$ miles from the light, one mile from the eastern edge of the reef, and the same distance from the shoal water to the southward. If they wish still more room, they may choose their berth in 9, 10, or 11 fathoms, and will find a bottom of stiff mud in either depth.

When lying at anchor, with the light bearing S. 55° W., and distant 3 miles, and in 8 fathoms at low water, I observed that the first of the flood came from the northward; the vessel then tended gradually round, with her head to the N.E., east, and S.E. at the end of the tide. The vessel continued to go round with the first of the ebb, which came from the southward off the shoals, to the S.W., west, and N.W., which latter point she reached at about 2 hours ebb; and she continued with her head in that direction, from which the tide came, until near the end of the tide. She then began to tend again, with her head to the north and N.E., as before, going completely round the compass in 12 hours. It was never entirely slack water, the stream continuing to run, more or less, during the whole time. The rate of the ebb was 3 knots, and that of the flood 2 knots. This occurred in a perfectly calm day.

*Tides in Green
Island Road.*

CHAPTER VI.

THE NORTH COAST OF THE GULF AND RIVER OF ST. LAWRENCE,
FROM ST. JOHN RIVER TO POINT DE MONTS; AND FROM
THENCE TO LITTLE BERGEFON NEAR THE SAGUENAY.

51. General Description of the Coast from the River St. John to the River Moisie. Magnetic Nature of the Coast. Appearance of, and Approach to the Shore.—52. River St. John, Magpie River, Sawbill River, Shallop River, Manitou River, Bason River, Point St. Charles. River Moisie, and the Coast and Dangers.—53. The Shoal to the westward of Point Moisie. Seven Islands Bay.—54. The Coast from the Seven Islands to Point de Monts. River St. Margaret. Cawee Islands. Lobster Bay. Pentecost River. English Point. Egg Island and Reefs. Calumet River. Caribou Point. Trinity Bay. Point de Monts Light-house. Point de Monts, and detached Rocks.—55. The North Coast of the Estuary, to Point St. Giles. St. Augustin Cove. Goodbont River. St. Nicholas Harbour. St. Pancras Cove. English Bay.—56. Manicouagon River. Manicouagon Shoal. Outard River. Outard Bay. Bersimis River.—57. Bersimis Point and Shoals. Jeremy. Cape Colombier. Gulgare Shoal. Wild Fowl Reef. Plongeur Bay. Baie de Laval. Port Neuf River. The Port Neuf Sands.—58. Point Milles Vaches. Milles Vaches Bay, and the Coast to the south-westward. Great and Little Bergeron Coves.

*General
Description of
the shore.*

51. FROM the River St. John to the River Moisie the course is W.N.W. $\frac{1}{2}$ W., and the distance 69 miles. The whole of this long line of coast, with the exception of its two extremities, that is to say all between Magpie and Trout Rivers, is composed of primary rocks rising immediately from the sea in steep, although often rounded hills, which are either bare, or partially wooded with small trees of the pine species. The hills in front, or next to the sea, seldom exceed 200 or 300 feet in height: but others, a short distance back from the shore, form a range of greater elevation, varying from 500 to 700 feet, and nowhere exceeding 1000 feet of height above the sea.

Elevation.

*Magnetic
Nature of the
Coast.*

The black oxide of iron, besides being a constituent mineral in the granitic rocks of this coast, is found abundantly in nests and veins, particularly in the vicinity of Sawbill River. Its magnetic action on the needles of compasses on shore is such as to

cause the variation obtained by them to vary from 14 to 29 degrees west. Whilst sounding in the boats, we sensibly felt this disturbing influence, which diminished or increased as the boat receded from, or approached towards the shore. In the Gulnare, at the distance of 2 or 3 miles, the error, from this cause, never exceeded half a point, and at the distance of 5 or 6 miles it became insensible.

The appearance of this coast from a vessel is slightly undulating, bold and unbroken, presenting features so little diversified that it is very difficult to make out one part of it from another at a distance of 2 or 3 leagues; but upon a nearer approach, the mouths of the rivers, taken in connexion with the features of the neighbouring land, will in general supply distinguishing characters, by which the situation of a vessel may be ascertained.

Appearance of the Coast.

This coast is not by any means so bold as it appears from a distance, for there are many rocks along it both above and under water, several of which are very dangerous, and nearly 1 mile from the shore.

The Coast not quite bold.

There are soundings off every part of this coast, as will be seen in the chart; but I advise those who may not be fully acquainted with it not to approach the shore between Magpie and Bason Rivers nearer than 20 fathoms. Still greater caution becomes necessary between the last-named river and Point St. Charles, where 40 fathoms is as near as a large ship can approach with prudence, for that depth in several places will be found within 1 mile of the rocks.

Approach to it by Soundings.

52. The RIVER ST. JOHN is a large stream occasionally frequented by fishing-schooners early in the season, and which our boats ascended 6 miles, following the winding of its channels, with a depth of water varying from 1 to 3 fathoms at low water. The tide flows no further than the distance just mentioned, where the river becomes too rapid to be navigated by other than canoes or flat-bottomed boats. The course of the river, for several leagues up from the entrance, is between high cliffs of stratified sand and gravel over clay, with small sandy islands occasionally. The country, on either side, is covered with a thick growth of small spruce trees. Five or six leagues from the sea, following the stream, there are reported to be high falls over granite rocks. At the entrance, between the clay cliffs on the west and a sandy

River St. John.

Breadth.

River St. John. point on the east side, the river is 130 fathoms wide. The breadth increases to nearly half a mile immediately within the entrance, and then decreases again gradually, being nowhere less than 100 fathoms wide in the first 6 miles.

There are two log-houses on the west bank, half a mile within the entrance, where a party of men occasionally reside to fish for salmon; and vessels may lie close to them in 2 fathoms at low water.

Shifting Bar. An extensive bar of sand, half a mile out from the entrance, shifts with every gale of wind, and has seldom more than 3 or 4 feet over it at low water; at high water there are 7 or 10 feet on the bar, according as it may be neap or spring tide. Southerly and westerly winds cause so heavy a surf as to render the bar impassable. There is good anchorage outside the bar, which may be safely approached by the lead, the soundings decreasing gradually from 20 to 3 fathoms over sand and clay bottom; the greater depth being at $2\frac{1}{2}$ miles, and the lesser at three-quarters of a mile, from the river's mouth. The entrance of the river lies nearly $6\frac{1}{2}$ miles N. 31° W. from the Perroquets, which are the westernmost of the Mingan Islands; and Mount St. John, an isolated, saddle-backed hill, 1416 feet above the sea at high water, bears N.E. $\frac{3}{4}$ N., 11 miles, from the entrance.

*Anchorage
outside.*

Between the St. John and Magpie Rivers the coast consists of white clay cliffs, with a superstratum of sand, which is fast consolidating into sandstone by means of the red oxide of iron furnished by numerous small streams.

Magpie River. MAGPIE RIVER, nearly in the centre of Magpie Bay, and 5 miles N.W. $\frac{1}{2}$ N. from the River St. John, is a large and rapid stream, with several rocks above and under water off its east point of entrance, and one-third of a mile off shore.

Waterfall.

The entrance of this river, between steep rocks, is only 10 fathoms wide, and the ebb tide rushes out of it in a torrent 5 fathoms deep. One hundred and fifty fathoms within this narrow entrance the river falls about 30 feet over granitic rocks. There are from 7 to 9 feet at low water over the bar outside, but as this river is of no use either to vessels or boats it is unnecessary to describe it further.

Shoal.

Rather more than three-quarters of a mile to the westward of the river, and nearly one-quarter of a mile off shore on the west

side of Magpie Bay, there is a rocky shoal, on which the sea *Magpie Bay*, almost always breaks at low water.

The course and distance across *Magpie Bay*, from the River St. John to *Magpie Point*, is W.N.W., 8 miles. There is good anchorage, with winds off the land, in *Magpie Bay*; and vessels may stand in to 7 fathoms at low water in every part of it, but the southerly and westerly winds roll in a very heavy sea.

Three and a half miles W.N.W. $\frac{1}{2}$ W. from *Magpie Point* is *Four Fathoms' Ridge of Rocks*. *Ridge Point*, from which a long and narrow ridge of rocky ground, extends 4 $\frac{1}{2}$ miles to the westward across a bay, wherein there is one large and several small rocks above water. The western side of this rocky ground is nearly 1 mile off to the southward of *Thunder Point*. There is a very heavy sea upon this ridge at times, and it then becomes dangerous to large ships. There are 20 fathoms of water close outside of it in some parts, and 30 fathoms is quite near enough to its west end.

SAWBILL RIVER, situated in the bay between *Sheldrake* and *Sawbill River*. *Ore Points*, and 23 $\frac{1}{2}$ miles westward of the River St. John, is the next place worthy of notice. It may be distinguished by the clay cliffs immediately within the entrance, and by the peculiar hills on either side of it, which are barren and of grey felspar, thickly studded with small round mounds.

This river affords shelter to boats and very small coasting craft; but it can only be entered in very fine weather, in consequence of the heavy surf. It has scarcely any bar; but the entrance, at the western extremity of a long and narrow spit of sand, which extends across the river's mouth, is very narrow, and from 4 to 11 feet deep, according to low or high water, in ordinary spring tides. At high water neap tides there is seldom more than 9 feet of water. The same depth continues only for a very short distance within the entrance.

Nine miles S. by E. from the entrance of this river there is a *Cod-bank*. bank of sand, gravel, and broken shells, on which codfish abound, and there are upwards of 60 fathoms between it and the shore.

SHALLOP RIVER, 7 $\frac{1}{2}$ miles further to the N.W. by W., affords *Shallop River*. shelter only to boats, and can only be entered when there is no surf. There are several rocks, both above and under water, off this river, and also off *Sandy River*, a small stream about 2 $\frac{1}{2}$ miles

further westward. The outermost of these rocks lie fully half a mile from the shore.

Manitou River. MANITOU RIVER is the next in order, being $4\frac{1}{2}$ miles N.W. by W. of Shallop River. It is the largest on this coast, excepting the Rivers St. John and Moisis, and it is distant to the westward from the first of these rivers 35 miles. It may be readily distinguished from a vessel several leagues off the coast by two remarkable patches of clay cliff, one of which is close to the eastward, the other about 1 mile to the north-westward of its entrance.

*Magnificent
Waterfall.*

To enter this river, keep close along the rocky west side of Manitou Point, leaving on the larboard side the sandy spit close within it, which stretches out from the sandy west point of the entrance. The channel is always in this position, but it is more or less deep and wide according to the season and the winds which may have recently prevailed. In general the channel is about 30 fathoms wide and 5 feet deep at low water, whilst at high water 9 feet in neap tides, and 12 feet in spring tides, may be carried in. Strong southerly and westerly winds cause a heavy surf, and render the entrance impracticable. A short distance within the entrance there are 9 feet at low water, deepening gradually to 5 fathoms at the first rapid, one mile up the river. Half a mile further up, the river falls 113 feet perpendicularly, over sienite and porphyry, in one unbroken sheet of water, forming one of the most beautiful cascades in Lower Canada.

*Anchorage off
Manitou River.*

There is good anchorage off this river. Ships may safely anchor in fine weather with the wind off-shore, having the entrance of the river bearing N.E. $\frac{1}{2}$ E., $1\frac{1}{2}$ miles, where they will have 15 fathoms over mud bottom, and be more than 1 mile distant from Manitou Point, the nearest point of the shore. If they require water they will find it at a small stream on the western shore, a short distance within the entrance; or they may row up the river until they find the water fresh.

Buchan Point.

Small vessels may anchor further in-shore to the westward of the bar, and in the bay between Points Manitou and Buchan, which are 3 miles from each other; for the soundings decrease regularly in towards the shore, with sand and clay bottom, and there is no other danger but a small rocky shoal which bears W. by N., $2\frac{1}{4}$ miles, from the entrance of the river, S.E. $\frac{1}{2}$ S.,

nearly a mile from Point Buchan, and which is about three-quarters of a mile off-shore. There are 7 fathoms within this shoal, and 9 fathoms close outside of it, so that it should be guarded against by vessels beating along the coast.

Buchan and Fall Rivers, and also Hotteurs River, fall in cascades in the sea, or close to it, and thus serve to point out to a vessel her position off the coast; and there is, moreover, a remarkable white patch close to the westward of Buchan River. *Cascades of Buchan and two other Rivers mark the Coast.*

BASON RIVER, which is $10\frac{1}{2}$ miles W.N.W. $\frac{1}{2}$ W. from Manitou River, has a spit of large stones extending about 150 fathoms out from its east point of entrance. The entrance is very narrow, with a varying depth, which is less or more according to the prevalence or infrequency of the S.W. winds; but there is in general enough water for very small coasting craft or large boats. There are rapids a quarter of a mile within the entrance. *Bason River.*

Cape Cormorant, $1\frac{1}{2}$ miles west of Bason River, is a small peninsula, on the inner side of which there are the log huts of a trading post not always occupied, and which cannot easily be seen from the sea. *Cormorant Cape.*

Blaskowitz Point is $5\frac{1}{2}$ miles W.N.W. $\frac{1}{2}$ W. from Cape Cormorant. Between them are the Cormorant Islets, joined to the shore at low water, and not readily distinguishable from the main land. *Blaskowitz Point. Cormorant Islets.*

A small and dangerous reef, called Cormorant Reef, lies off those islets, and about a mile from the shore. It has 12 feet least water, and bears W. $\frac{1}{2}$ N., $2\frac{1}{2}$ miles, from Cape Cormorant. On it, Points Blaskowitz and St. Charles are in one, bearing W.N.W. nearly, so that vessels approaching this part of the coast should keep the latter point open. The coast between Cape Cormorant and Point St. Charles is broken into coves, two of which are nearly 1 mile deep, full of rocks, and afford shelter only to boats. The shore is here fringed with rocks both above and under water, and should not therefore be made too free with. *Cormorant Reef.*

POINT ST. CHARLES will readily be known by the cove on the east side of it, and by the trending of the land on the west side northward towards Trout River. *St. Charles Point.*

The REEF off Point St. Charles is extremely dangerous, being so bold that there is no warning by the hand lead, and very little with the deep sea lead. It is composed of a great number of rocks near to each other, but having a considerable depth of *St. Charles Reef.*

*St. Charles
Reef.*

water between them. Some of them always show, but the outermost patches are always covered. These last lie rather more than three-quarters of a mile off to the S.S.W. from the southern extreme of Point St. Charles; and the reef continues to the first cove, $1\frac{1}{2}$ miles to the north-westward of the point, but does not there extend so far off-shore as off the point itself.

Vessels beating to the westward should take care not to be becalmed to the westward of this reef, lest the heavy swell from the S.W., so frequent on this coast, should heave them towards the reef, for the water is too deep to anchor until close to the breakers.

Moisie Bay.

Moisie Bay intervenes between Points St. Charles and Moisie River, the course across it is west, and distance 11 miles, with a depth of between 50 and 60 fathoms nearly all the way. Trout River, a small stream, is in the centre of this bay, and $6\frac{1}{2}$ miles N.W. $\frac{1}{2}$ W. from Point St. Charles. Here the rocky shores terminate, and the bold sandy beach, which extends $6\frac{1}{2}$ miles S.W. by W. to the River Moisie, commences.

*Trout River.**Seal House
Cove.*

Seal House Cove, on the east side of the bay, and $2\frac{1}{2}$ miles from Point St. Charles, affords shelter only to boats. There are two log houses there, which are occasionally occupied as a fishing and trading post.

The soundings are regular in the bay, with deep water, over clay and sand bottom.

The granitic hills, which leave the shore at Trout River, continue inland until they join the ridges in rear of the Bay of Seven Islands. Between the hills and the sea there is an extensive tract of low sandy country, thickly wooded, and which seems to have been formed, in the course of ages, by the united action of the rivers and the sea.

Moisie River.

The RIVER MOISIE enters the sea on the east side of the point of the same name, which is the southern extremity of the sandy country just mentioned. It is a larger river than the St. John, discharging a great quantity of water in the spring after the melting of the winter snows, and bringing down from the interior great quantities of sand, which so obstruct its wide and shallow channel in the first $2\frac{1}{2}$ miles from the sea that boats cannot ascend at low water. The river becomes shallow immediately within the entrance, expanding into a wide place full of sand-bars dry at low water. In the above-named distance from the sea,

the breadth of the river decreases from $2\frac{1}{2}$ miles to half a mile, *Moisie River.* and at the end of that distance the sand-bars cease. The river has then a clear channel of 9 feet deep, between steep sandy shores or cliffs for 1 mile further, where its breadth is a quarter of a mile. Here our examination was terminated by a head-wind and the rapidity of the current, in the spring of the year. The traders report that flat-bottomed boats can ascend to the first rapids, at the distance, following the stream, of 6 or 7 leagues from the sea. The bar, which is of sand, dry at half tide, *Bar.* runs out from the long, low, and narrow east point of entrance, nearly half a mile to the south-westward, and nearly parallel to the east side of the west point of entrance.

The entrance of the River, between this bar and the west point, *Entrance.* is from the S.W., and continues for 600 fathoms with a breadth of a quarter of a mile, and a depth varying with the seasons and the winds which prevail; those from the southward and eastward having a tendency to block up the channel. I believe that there *Depth.* is seldom a less depth than 9 feet at low water, the same as inside close under the west point of entrance, which is the only place where a small vessel can find shelter, close to two log-houses, occasionally employed as a salmon-fishery by the people of the Hudson Bay Company. The shelter here is extremely imperfect in gales of wind from the southward and eastward, which send in so heavy a sea that, after breaking completely over the bar and across the entrance, it still retains power enough to seriously affect a small vessel. The tides rise *Tides.* from 5 to 8 feet.

53. Although the bar of the River Moisie is so bold that there *Moisie Bank.* are 50 fathoms of water at the distance of three-quarters of a mile from it to the south and S.E., yet the shallow water continues from it to the westward $3\frac{1}{2}$ miles past Point Moisie, in such a manner as to form an extensive triangular sandy shoal, with from 3 to $1\frac{1}{2}$ fathoms on it at low water.

The S.W. extremity of this shoal, near which there is a *Moisie Rock,* patch of rock with 9 feet least water, bears W.S.W. $\frac{1}{2}$ W., $2\frac{1}{2}$ miles from Point Moisie, and is nearly $1\frac{1}{2}$ miles from the shore. This is an extremely dangerous shoal, being as bold as a wall. *very dangerous.* There are 25 fathoms of water, alongside of its south and S.W. edges, and upwards of 30 fathoms at the distance of two cables. It can generally be seen, in fine weather, from the change in the

Moisie Rock. colour of the water, and from heavy breakers when there is much sea running.

Mark. There is no close leading mark for avoiding this shoal, so that the only direction I can give to a vessel standing towards it, is to tack when the northern side of the Manowin Island comes on with the southern point of the Great Boule Island: she will then be $1\frac{3}{4}$ miles from the edge of the shoal, and in upwards of 30 fathoms water.

East Rocks. The East Rocks, which are low, bare of trees, and always above water, lie in Boule Bay, between this shoal and the Boule Islands, as will be seen in the chart. They are out of the way of vessels, which ought not to go into this embayed place, since there is generally a heavy southerly swell rolling in, which would render it difficult to beat out.

The south point of Great Boule Island bears west, and is distant $9\frac{1}{4}$ miles from Point Moisie.

The Seven Islands. The SEVEN ISLANDS are high and steep, of primary rocks, very thinly wooded, and can be made out from a distance of 7 or 8 leagues, being unlike anything else in the Gulf. The easternmost of

Boule. these Islands are the Great and Little Boule, the former of which is the highest of them all, its summit being 695 feet above the sea at high water. Next, westward, and parallel to these two, are

Basque. the Little and Great Basque Islands; the first named being, as before, the outer island. Great Basque Island is 500 feet high. Manowin and Caroussel lie to the S.W. of the Basques.

Manowin. Caroussel. The former island is 457 feet high; the latter much lower, and the southernmost of the islands. The West Rocks lie between Manowin and the peninsula, which forms the west point of the Bay of Seven Islands. They are too small and low to appear as the seventh island; but the peninsula has that appearance when seen at a distance from sea, being higher than any of the islands, and 737 feet above the sea at high water.

Seven Islands Bay. The relative situations of these Islands, their size, and the breadth of the channels between them, will be best seen from the charts; they are so placed as to completely shelter the magnificent bay within them, which is $2\frac{3}{4}$ miles wide at the entrance, between Point Chassé, the east end of the peninsula, and Sandy Point, which is opposite the northern end of Great Basque Island. From the entrance, the Bay of Seven Islands extends about 6 miles to the northward and westward, being so nearly

landlocked as to resemble a lake, sufficiently extensive for the *Seven Islands Bay*. largest fleets to lie in perfect safety; the bottom is of clay, and there are no shoals, excepting the mud banks which fill up the northern part of the Bay.

A fine broad, bold, sandy beach extends for 3 miles northward from the east point of the Bay, to the entrance of the principal river, near which stands the Hudson Bay Company's trading post. The houses at this post cannot be seen from the outer parts of the Bay, but there is a wooden store on the beach, off which vessels usually anchor. Water can be obtained from this river at high tide.

To the northward of the Bay, at the distance of a few miles, there are two parallel ranges of mountains; the summits of the nearest are upwards of 1300, and those of the most distant upwards of 1700 feet above the sea. These mountains, the high peninsula, the bold and hilly islands, and the other features around the bay, form a panorama of great beauty.

The narrow Passes between the two Boule Islands, the two *The narrow Passes.* Basque Islands, between Manowin and Carousel, and between Manowin and the West Rocks, require no further notice than to remark, that the tide sets strongly towards, and through them; the flood to the west, and the ebb to the eastward, a circumstance that should be attended to when becalmed at night, or when tacking in their entrances. The first and last of these channels have water enough for the largest ships; but the one is subject to sudden and baffling flaws of wind round the Boule Islands, and the other is rendered intricate by rocks which nearly cover at high water.

There are three obvious channels leading into Seven Islands *Eastern Channel.* Bay, namely, the eastern, the middle, and the western channels. The eastern channel, between Great Basque Island and Sandy Point, is seldom used, having a rock in its centre, which is covered only in high tides. A reef, with from 6 to 9 feet of water, extends for a quarter of a mile to the eastward of this rock. The passage on either side of it is from 13 to 15 fathoms deep, and 200 fathoms wide. Vessels should only attempt it with a fair wind, and should keep within a cable's length of Basque Island, or as near to the sandy point of the main land: the latter is recommended as preferable. This narrow eastern channel may be approached from between the Boule Islands and the East Rocks, or from between the Boules and Basques Islands,

Seven Islands Bay.

both routes being entirely free from danger, for the islands are so bold that a vessel may approach them within a cable's length in every part.

Middle Channel.

The middle (which is also the principal and best) channel is upwards of $1\frac{1}{2}$ miles wide, and so free from danger that the largest ship may approach the shore within half a cable's length in every part, excepting at Point Chassé, where a reef runs out 120 fathoms from the shore. This channel, between the Basque Islands on the east, and Carousel, Manowin, the West Rocks, and the peninsula on the west, is preferable in every wind, excepting the north and N.W., with which, to save beating, (since they blow out of the bay,) it might be desirable to enter by the west channel. The course through the middle channel into the bay is due north by compass.

West Channel.

The west channel between the West Rocks and Point Croix, at the southern extremity of the peninsula, is three-quarters of a mile wide, and quite free from danger. There are 2 or 3 rocks a cable's length to the northward of the islets, called the West Rocks, but they always show, excepting in very high tides and the smoothest sea. The only direction necessary, therefore, is not to go nearer to the West Rocks than 2 cables' length; the peninsula side is quite bold. There is, however, a caution necessary here respecting the ebb tide, which is turned off by Point Croix towards the West Rocks, a circumstance which must be attended to in taking this channel with a scant northerly wind.

Marks unnecessary.

There are no leading marks for these channels, nor are any required, for the two last described are so free from danger, that a person who had never seen them before might take the largest ship into the bay, without either chart or pilot, by simply giving the shore a berth of 2 cables' length in every part.

The water is too deep for anchoring in any of these channels, and the bottom generally rocky, excepting to the eastward and northward of the Boule Islands. The ground is not fit for anchoring until well into the Bay.

Anchoring Berth.

The best berth for a large ship to lie at anchor in Seven Islands Bay is with Sandy Point and the north side of Little Boule Island in one, and with Point Chassé on with the west side of the West Rocks. The N.W. extremity of the sandy beach near the entrance of the river will then bear N. by E. $\frac{1}{2}$ E.: the vessel will be in 9 fathoms at low water, over

clay bottom, nearly one mile from the sandy beach to the eastward, *Seven Islands Bay.* and nearly three-quarters of a mile from the 3 fathoms edge of the shoals, which occupy the northern part of the bay. Smaller vessels may lie closer to the shore, in 6 fathoms at low water, which is as near as any vessel ought to anchor.

In this anchorage there is a considerable swell with a strong southerly wind, but never enough to endanger a vessel, although sufficient to prevent boats from landing. Those that may wish to lie perfectly smooth, may anchor in the S.W. part of the bay, in 13 fathoms, soft clay bottom, where they will be perfectly landlocked.

The rate of the stream of the tides in the bay, and in the principal channels between the Seven Islands, seldom amounts to a knot; but in the narrow channel between the Boule Islands, the Basque Islands, and in the east and west channels, it may amount to 2 knots in spring tides, or even more in the narrowest of these channels when accelerated by strong winds. The flood, coming along the coast from the eastward, strikes the Boule Islands, and passes between them, and also between the two Basque Islands. It is turned off by the Great Boule towards Carousel Island, and the west channel; but the greater part of the stream, which passes within the Boule Islands, enters the bay by the east channel, between the Great Basque Island and the main land. There is very little flood in the middle channel excepting an eddy *outward* stream close along the shores of the peninsula, and the narrow stream from between the Basque Islands, which sets across towards the west channel.

The ebb sets fairly out of the bay, part of it by the east channel, and part by the middle channel, where it meets the stream through the west channel, which turns it to the eastward, past the southern points of the Basque and Boule Islands.

In fine nights the winds are almost always light and baffling *Baffling Winds at night.* between the islands, particularly if the wind be from the westward in the offing. At such times there is generally a northerly land wind in the bay, but it does not often reach far out among the islands in the early part of the night, although it often does towards the morning.

The water is extremely deep outside of the Seven Islands, as will be seen in the chart, and the islands are so bold, that a vessel may stand close to their rocky shores.

*Seven Islands
to Point de
Monts.*

54. The course from the S.E. point of Carousel, the southernmost of the Seven Islands, to Point de Monts lighthouse, is S.W. by W. $\frac{1}{4}$ W., and the distance 60 miles.

This coast is less bold in appearance, being less elevated than that to the eastward of the Seven Islands. The hills are, for the most part, far back in the country, and the shores are of very moderate height above the sea. The country near the sea is formed of small and low granitic hills, partially wooded with spruce trees. Marshes and ponds are frequent between the hills; sandy beaches occur occasionally, and the sandy tracts in rear of them are always the most densely wooded parts.

*Bold Coast and
useful Sound-
ings.*

There are no detached dangers off this coast, which is much more bold than its appearance would promise; and although the water is deep off every point of it, yet in general, and with few exceptions, there are sufficient soundings with the deep sea lead, to give warning to a vessel of her approach to the shore.

The course from Carousel Island across St. Margaret Bay to Point St. Margaret, is W. by N., 14 miles; with very deep water all the way.

*St. Margaret
River.*

ST. MARGARET RIVER is nearly in the centre of the bay of the same name; being 6 miles N.W. by W. from Point Croix. This river, although a large stream, affords shelter to boats only. It has a bar of sand extending three-quarters of a mile out from the entrance, and having several small channels through it, with only 3 feet at low water. Immediately within the entrance, which is 170 fathoms wide, there are 6 feet, and only 3 feet can be carried up to the low falls, which are over granitic rocks, and $3\frac{1}{2}$ miles from the entrance. Below the falls, the river flows between cliffs of sand and clay, and is full of sand-bars, dry at low water. The water deepens gradually outside the bar, with sandy bottom, to 18 fathoms at the distance of a mile from the 3 fathom mark. There is sandy beach for a considerable distance on either side of the river's mouth.

*St. Margaret
Point.*

ST. MARGARET POINT is rocky, of very moderate height, and has a round hill a short distance within its extremity. There are several rocks, which cover at high water, and which extend to the distance of nearly one-third of a mile off this point. These rocks are extremely bold, and there is no bottom with the hand lead close outside of them, and no bottom with 70 fathoms of line at a less distance than 2 miles.

The course and distance from St. Margaret Point to Great *Rock River.*

Cawee Island is S. W. by W. $\frac{1}{2}$ W., 16 miles, across a bay in which are Rock River, and many other small streams. The coast in this distance is low, and fringed with small islets and rocks close to the shore, which may with prudence be closely approached by the lead; but 20 fathoms is near enough to it, for those who are not fully acquainted. The deep sea soundings are very irregular off *Irregular Soundings off May Islets.* this section of the coast, for in some parts there are not more than 50 fathoms 4 or 5 miles off-shore, whereas in others, as off the May Islets, 6 miles north-eastward of the Cawee Islands, no bottom will be found with 60 fathoms within 2 miles of the rocks.

The CAWEE ISLANDS are two small and hilly islands of grey *Cawee Islands.* granite, and nearly bare of trees. Great Cawee Island, which is the largest, the highest, and most to the eastward, is about three-quarters of a mile in diameter, and estimated to be about 250 feet high. Little Cawee Island, lying a mile further to the south-westward, is composed of two contiguous islets, which occupy a length of half a mile parallel to the coast; it has several rocks above water close off it to the S.W., and a reef 120 fathoms to the north and N.W. of its west point. Both of these islands are bold as a wall to seaward, but there is a small and high round rock a quarter of a mile S.W., from the south point of the Great Cawee, and this is the only danger between the islands, being, like their southern sides, so bold that a large ship might lie alongside of it.

There is a secure boat cove on the N.E. side of the Great Cawee, *Great Cawee Cove.* with plenty of water, but too small and narrow in the entrance for vessels. Off the mouth of this cove to the N.E., and at the distance of 200 fathoms from the island, there is a rocky shoal *Great Cawee Shoal.* 100 fathoms in diameter, and with 15 feet least water. The mark for this shoal is the north side of Great Cawee and the point of the main land to the westward in one, bearing W.S.W. $\frac{1}{2}$ W. Half a mile N.E. by N. from this shoal is a small round ledge, a *Cawee Ledge.* wash at low water, and one-third of a mile from the main land. The marks for this ledge are the south side of the large rocks, between Great Cawee and the main, on with the point of the main to the westward; and the south side of Little Cawee just shut in behind the north side of Great Cawee Island.

At the distance of 200 fathoms from Great Cawee, between it and the main, there are two large rocks close together, which are 150 fathoms from the main land, and have a reef off them 200 fathoms

to the S.W. by W. Nearly half a mile N.E. by E. from these rocks, and at the same distance from the main, there is a small rock which always shows.

*Anchoring Bay
in Great
Cawee.*

There is a bay on the inner or N.W. side of the Great Cawee Island; the anchorage is in the mouth of this bay, in 7 fathoms muddy bottom, and at the distance of a cable's length from the Island. The shelter is complete with winds from W. by S. round by north to N.E., and tolerably so with all easterly winds, although some swell rolls round the island; but the S.W. winds blow right in, and send in a very heavy sea. To run into this anchorage from the eastward, steer N.W. past the N.E. side of Great Cawee Island, going no nearer than half a mile, (to avoid the shoal off the mouth of the cove,) until the point of the main land to the westward opens clear of the north side of the Island. Then steer for the point of the main land, keeping it midway between the north side of the Island and the large rocks to the northward of it. When you arrive between the rocks and the Island, haul into the mouth of the small bay, which you will see on the N.W. side of the latter, and anchor in 7 fathoms at low water. There are 12 or 13 fathoms in the middle of the channel, and upwards of 9 fathoms can be carried through.

In running for this anchorage from the westward, a vessel may pass between Little Cawee and the main, keeping in mid channel; but the better and safer way is to pass between Little and Great Cawee Islands, hauling close round the west point of the latter into the anchorage. By this route there is nothing in the way, excepting the round rock to the south-westward of the south point of the Island, which can always be seen.

Tides.

The tides run fair through between the islands and the main land, at a rate which seldom exceeds $1\frac{1}{2}$ knots, and which is in general much less.

*Anchorage
between Great
Cawee and
the Main.*

From the foregoing description it will be seen that this is a very dangerous and intricate place; and the anchorage between Great Cawee and the main is too small for large vessels, the channel being only 200 fathoms wide. Still this anchorage, although too small for an occasional place of shelter, excepting for small vessels, may, nevertheless, be of great use as a place of refuge for a vessel in distress, from loss of masts, or other cause; for the ground is so good that I believe a vessel, well moored there, would ride out any gale which occurs during the summer months.

There is neither wood nor water in the Cawee Islands, but both may be obtained from the opposite main land.

Point Sproule, three-quarters of a mile to the north-westward *Point Sproule*, from Little Cawee Island, is the eastern point of Lobster Bay. A reef extends off its south side, a cable's length towards Little *Reefs*. Cawee; but the principal reef off it runs out 400 fathoms to the west and S.W.

LOBSTER BAY is between Point Sproule and the Crooked *Lobster Bay*. Islands, which are a group of small islets and rocks, running out from the shore 3 miles to the westward of Point Sproule. All the N.E. part, or head of Lobster Bay, is occupied by an extensive flat of sand and boulders, dry at low water, and on which lobsters abound; but it is an excellent open roadstead, with plenty of room for the largest ships.

The Crooked Islands are bold to the southward and eastward, *Crooked Islands*, leaving the mouth of the bay clear of all danger across to the reef off Point Sproule. Vessels may anchor midway between the reef and the islands, choosing their depth from 5 to 12 fathoms, according as they may wish to lie at the distance of half a mile, or of one mile from the 3 fathom edge of the flats in the head of the bay. The bottom is of fine sand over clay, and the shelter from S.W. round by west and north to east, but all winds from east round by south to S.W. blow right in, with a heavy sea and thick weather.

PENTECOST RIVER enters the sea on the S.W. side of a rocky *Pentecost River*, point, $1\frac{1}{2}$ miles to the westward of the Crooked Islands: the opposite point of entrance is of sand. Two miles S.W. from the mouth of the River, there is a remarkable round and wooded hill. The first reach of the River is towards this hill, leaving a very narrow sandy ridge between it and the sea. Steep cliffs of sand and clay form the River's banks for $2\frac{1}{2}$ miles, to which distance only it is navigable for boats. The entrance of the River is only 15 fathoms wide, with a depth of 7 feet at low water, and there are 9 feet within for a short distance. At high water from 12 to 16 feet can be carried in, so that this River is capable of affording shelter to coasting schooners as well as boats: but it would be very difficult to take a sailing vessel in through so narrow an entrance, and could never be done in the ebb tide, which runs out with great rapidity.

A fine bold sandy beach extends from this River to English Point, a distance of 7 miles to the S.W.

English Point. ENGLISH POINT is $1\frac{1}{2}$ miles to the northward and eastward from the north rocks of Egg Island, and has a shoal of large stones extending off it to the distance of one-third of a mile. On the S.W. side, or towards Egg Island, this shoal may be approached to 6 fathoms at low water, but on the S.E. and east it is very bold, there being 15 fathoms at the distance of one-third of a mile, and 30 fathoms at the distance of a mile from the 3 fathom mark.

Egg Island.

EGG ISLAND bears from the south point of Great Cawee Island S.W. $\frac{1}{2}$ W., 14 miles. It is low, narrow, and of granitic rocks, without trees, and three-quarters of a mile long, in a N.N.E. $\frac{1}{2}$ E. direction. The North rocks, always above water, are 400 fathoms distant from the island to the N.N.E.; they form a low, narrow, black reef, which is 300 fathoms long, in the same direction, bold towards the main land and also towards English Point. A reef under water runs out from these rocks in the direction of their length, (namely to the S.S.W.,) and to the distance of 250 fathoms, leaving only a very narrow 3 fathom channel between them and the island. The N.E. reef runs out to the distance of 600 fathoms from the N.E. point of Egg Island, and is the greatest danger between Seven Islands and Point de Monts. Some of the rocks upon the N.E. reef show in low tides, and the sea generally breaks on them at low water. This reef prevents the swell from rolling in between the north rocks and Egg Island, and thus assists in sheltering the anchorage.

*Dangerous
Reefs.*

*Egg Island
Anchorage.*

The whole, that is the island, rocks, and reefs, form a natural breakwater, which is $1\frac{1}{2}$ miles long, in a N.N.E. direction, and inclines slightly towards the shore at its northern end, in such a manner as, with the assistance of the shoal off English Point, to shelter the anchorage from N.E. winds. The northern end of this breakwater is distant from the main land nearly three-quarters of a mile, and the southern end more than a mile; but extensive flats extend from the main, and diminish the navigable breadth of the channel to 370 fathoms in the narrowest part, which is nearly opposite the northern end of Egg Island. The best anchorage is, however, to the S.W. of this narrow part, where the breadth, from the 3 fathom edge of the shoal off the main to Egg Island, is 600 fathoms.

All along the inner sides of Egg Island and of the reef under *Egg Island*. water to the S.S.W. of the North Rocks, as well as of the North Rocks themselves, excepting near their northern end, the water is very deep, there being from 17 to 24 fathoms at low water close to them. The depth decreases gradually towards the main land, and the best depth to anchor in is 9 or 10 fathoms, according to the time of tide. The bottom is of clay in the deep water towards the island, and of sand from the depth of 9 fathoms towards the main land. There is little danger of dragging an anchor up hill towards the main, but, with violent squalls off the land, vessels should have a good scope of cable out, for should the anchor start, they might be on the rocks before they could bring up again.

In order to have as much room as possible, with a moderate depth of water, vessels should not anchor to the north-eastward of a line joining Roadstead Point and the centre of Egg Island. The best position is with the S.W. end of Egg Island bearing S.E. by S., and the inner side of the North Rocks N.E.; English Point will then be open half a point to the westward of the latter. In this anchorage vessels will lie sheltered from N.E. round by north and west to S.W. by the main land, and from S.E. to N.E. by the Island, with its rocks and reefs. The winds from the remaining points, namely, those between S.W. and S.E., seldom blow strong, and even with them a vessel may find some shelter by shifting her berth to the eastward, where she will find 7 fathoms over sandy bottom.

No directions are necessary for running into this anchorage from the southward and westward, since the S.W. end of Egg Island is quite bold. But if it be intended to run through between the Island and the main, stand into the northward to 8 or 9 fathoms, or until English Point is open half a point to the northward of the North Rocks, then steer for English Point, giving the inner side of the North Rocks a berth of a cable's length, until you have passed the North Rocks a full quarter of a mile. You will then be in about 7 fathoms at low water, and may haul out to sea, going nothing to the southward of S.E. by E., to avoid the N.E. reef. There is no danger between the rocks and reefs of Egg Island and English Point, excepting the reef off the latter already mentioned.

These directions, taken in the reverse order, will enable a vessel to run through from the eastward; and I shall merely add

Egg Island. to them a caution not to approach the N.E. reef off Egg Islet, for there are 20 fathoms at the distance of a quarter of a mile from it in every seaward direction, and consequently little warning by the lead.

The anchorage at Egg Island is too small to be a favourite resort for large vessels, but in time of need, or as a place of refuge in case of distress, it would be found of great value on a coast so destitute of good harbours.

Water. There is no water on Egg Island, but it may readily be obtained from small streams on either side of Roadstead Point.

It is extremely difficult to make out Egg Island at night, by reason of the high land under which it lies, and which, coming from the westward, attains its nearest approach to the sea $1\frac{1}{2}$ miles in rear of English Point. But this high land, whilst it prevents the island from being readily seen, points out its situation very nearly.

Tides at Egg Island.

The rate of the tides between Egg Island and the main is from a half to one knot, and part of the stream of ebb sets towards and out through the narrow and dangerous 3 fathom channel between the island and the North Rocks. Part of the stream of flood comes in through the same channel.

Calumet River.

CALUMET RIVER is a small stream $2\frac{1}{2}$ miles W. by S. from the S.W. end of Egg Island; along the shore for a mile to the south-westward of its entrance, there are reefs of large stones extending out 600 fathoms from the high water mark, and having 15 fathoms off them at the distance of half a mile to seaward. To the S.W. of these reefs, as far as Trinity Bay, the coast is free from danger, and may be approached with safety, if due caution be used. There are 20 fathoms at the distance of from half a mile to 1 mile, and 40 fathoms from 2 to 3 miles from the shore.

Caribou Point.

CARIBOU POINT, $8\frac{1}{2}$ miles S.W. by S. from Egg Island, is a small rocky peninsula, having sandy coves on either side of its isthmus, in which pilot boats find shelter, and often remain on the look out for vessels.

Trinity Bay.

TRINITY BAY is 5 miles further along the coast to the southward and westward. It is 2 miles wide, and nearly 1 mile deep, with a fine sandy beach extending from its S.W. point to Trinity River, which is a small and rapid stream, abounding with trout and salmon, where water can be had only at high water, because of the large stones about its entrance. The S.W. point of the Bay is rocky, and off the N.E. point there are two low

black rocks; the depth of water between the points of the Bay is from 5 to 7 fathoms at low water over sandy bottom. This Bay affords excellent anchorage, in a moderate depth of water with good ground, and plenty of room to get under way in any wind. It is a very valuable stopping place, in westerly winds, for vessels bound up the St. Lawrence, to wait their opportunity to proceed round Point de Monts, and up the Estuary. *Trinity Bay good stopping place.* Pilots are generally found waiting in the Bay for vessels when the wind is from the westward, but in easterly winds they take shelter in St. Augustin Cove. *Pilots wait there.*

In running down along the land for Trinity Bay, either from the N.E. or S.W., come no nearer than 15 fathoms until the Bay opens; then haul in, and anchor in 7 fathoms at low water; with the lighthouse on Point de Monts (seen just within a small rock about $1\frac{1}{2}$ miles to the south-westward of the Bay) bearing S.W. by W., the outer of the two rocks off the N.E. point of the Bay N.E. $\frac{1}{2}$ E., and the entrance of the river N. by W.; the vessel will then be rather more than three-quarters of a mile distant from the S.W. point of the Bay. Large vessels may anchor further out, and in deeper water, if they think proper, and small schooners in 3 fathoms, close under the S.W. point. *Anchorage.*

POINT DE MONTS LIGHTHOUSE is 5 miles to the south-westward from Trinity Bay; it stands low down and close to the sea, is of the usual conical form, nearly white, and 75 feet high. The lantern is elevated 100 feet above the sea at high water, showing a bright fixed light, which can be seen from distances of 15, 20, and 23 miles nearly, according as the height of the observer's eye above the sea may be 10, 50, or 100 feet respectively. *Point de Monts Lighthouse.*

The extreme of the land to the north-eastward near Caribou Point bears N.E. $\frac{1}{2}$ E. from the light, which can be seen over the Point; and that bearing continued will pass little more than $2\frac{1}{2}$ miles outside of Egg Island at the distance of 20 miles from the light.

Vessels being to the eastward in a dark night, when the land cannot be seen, had better tack when the light bears W.S.W., or even W. by S. will be near enough, if they be as near to it as Trinity Bay. They may, however, stand in nearer, using due caution by the lead. Vessels to the westward of the light should tack as soon as it bears E. $\frac{1}{2}$ N.; it cannot be seen to the southward of east, in consequence of high land which interposes.

When it disappears, a vessel off Goodbout River will be only one mile from the bar; see art. 28.

*Detached
Rocks off
Point de
Monts.*

The south extremity of POINT DE MONTS is rather more than $1\frac{1}{2}$ miles S.W. by W. $\frac{3}{4}$ W. from the lighthouse. S.W. from the light, S.E. from the extremity of the Point, and half a mile off shore, lies a ledge of rocks with 9 or 10 feet least water. S.S.W., half a mile from a light, is another rock with 2 fathoms least water; and there is a third with little more water, and nearly as far off from the light to the E.S.E. These dangers should be carefully guarded against in making the light in thick weather, or when keeping close to the land with a northerly wind; and 15 fathoms is quite near enough to them for a large vessel at any time, being no more than 2 cables' distant from the first, and about twice that distance from the 2 last of them.

*Point de Monts
to Point St.
Giles.*

55. The land, which on the eastern side of Point de Monts is rather low, begins to rise immediately from that Point to the westward, and granitic hills very sparingly wooded, and in no part estimated to exceed 1000 feet in height, from the north coast of the Estuary to Point St. Giles, distant $30\frac{1}{2}$ miles W. $\frac{1}{2}$ N. from Point de Monts. The section of coast just indicated is as bold as any in the St. Lawrence, there being little or no warning by the lead, neither is there any good anchorage sufficiently roomy for the occasional use of shipping.

*St. Augustin
Cove.
Pilots.*

ST. AUGUSTIN COVE, $1\frac{1}{2}$ miles westward of Point de Monts, affords shelter only to boats; and pilots are generally found waiting here with easterly winds.

Goodbout River.

GOODBOUT RIVER, $8\frac{1}{2}$ miles westward from Point de Monts, enters the sea at the extremity of a sandy point, and has a bar of sand, which extends out from the eastern point of entrance to the distance of nearly half a mile, dries in great part at low water, and is extremely bold to seaward. There is usually at low water not more than 4 or 5 feet over this bar, on which a heavy surf very frequently breaks; and the River is only of use to boats, because of the difficult and narrow entrance, although there are 15 or 16 feet of water over the bar at high water, spring tides. There is a trading and salmon fishing post of the Hudson Bay Company at this River, and the houses can readily be seen. It is possible to anchor on either side of the bar of Goodbout River, but too near to the shore to be of general use.

Cape St. Nicolas, a high bare point of granite, bears from Cape St. Nicolas.
Point de Monts W. by N. 17 miles.

ST. NICOLAS HARBOUR is 3 miles N.E. by E. $\frac{1}{2}$ E. from the St. Nicolas Harbour.
cape of the same name; it is a narrow inlet between granitic hills from 500 to 700 feet in height, $1\frac{1}{2}$ miles in the direction of N.W. $\frac{1}{2}$ N. This Harbour is so perfectly secure, that a vessel might be laid on shore and repaired as if she were in a dock; on the S.W. side, a vessel may lie alongside of the rocks as alongside a wharf.

There is as much as $9\frac{1}{2}$ fathoms at low water, in the deepest part of the Harbour, and the bottom is of mud.

The breadth of the Harbour within no where exceeds 190 fathoms, and at the entrance is only 75 fathoms. The shoals on the east side of the entrance dry out so far as to leave a channel between them and Cross Point only 30 fathoms wide, and 5 feet deep at low water spring tides.

The depth that can be carried in at high water is from 14 to 17 feet, according as it may be neap or spring tides. The bottom in the entrance is of sand, with some few large stones upon it, which can be seen and avoided, if the tide be not high enough to pass over them. The entrance is situated in the centre of a small bay, three-quarters of a mile wide, and rather more than one quarter of a mile deep to the rocky point on the west side of the entrance to the Harbour, which will be readily seen projecting out into the bay, and is named Cross Point, from a small wooden cross upon Cross Point.
it. An extensive shoal of sand and boulders, which dry at half tide, extends from the east point of the bay, 340 fathoms to the W.S.W., and continues northward to the entrance of the Harbour. This shoal can always be seen, is quite bold, and completely shuts out the sea from the Harbour in southerly and easterly winds. The shoals on the west side extend across a small bay on the west side of Cross Point, and continue for 400 fathoms out to seaward, extending off-shore to the distance of 100 fathoms.

The anchorage between these shoals, in the bay off the Harbour's mouth, is only 300 fathoms wide, and consequently too small to be considered a roadstead for large vessels, but the ground is good, and the depth convenient for anchoring preparatory to warping into the Harbour.

South-east winds blow right into the Harbour, and are consequently the most favourable for running in, but with a strong wind in that direction, and at high water when the shoals are

*St. Nicolas
Harbour.*

covered, there is generally some sea outside the narrow entrance; an accident at such a time might be attended with serious consequences, and therefore it is only in very fine weather that the entrance should be attempted with a S.E. wind.

North-west winds blow right out of the Harbour, and often with great violence. A W.S.W. wind is the safest for running in, for the entrance and bay outside are then quite smooth, the sea being turned off by Cape St. Nicolas; but this wind will seldom take a vessel completely in, it will usually only enable her to shoot so far within Cross Point that a line may be sent ashore, or a kedge ahead, for the purpose of warping in the remainder of the way, which may be quickly done if due preparation has been made beforehand.*

The entrance should be attempted in the last quarter flood, then if the vessel touches the ground she will receive no damage, and there will be time for her to warp in before the tide begins to fall.

*Directions for
entering.*

To enter St. Nicolas Harbour, attend to the following directions. Being off the mouth of the bay, bring the end of Cross Point to bear N.N.E., then steer so nearly for it as to leave it not more than 50 nor less than 30 yards distant on the larboard hand. If the wind will allow, continue to run in, at the same distance from the shore on the west side, until you deepen your water; but if you lose the wind, or be met with light baffling flaws out of the Harbour, as often happens in westerly winds, send a line on shore on the west side, or drop your anchor under foot as soon as your vessel loses her way, and warp into deep water. The shoal water, which may be called the bar, and commences at Cross Point, continues for 200 fathoms within it, and the channel is rendered narrow by shoals off the eastern side, for an equal distance further up the Harbour. In order to have as much room as possible, a vessel should anchor further in than the three large rocks, which will be seen on the eastern side of the Harbour. To run out again, a vessel must wait for a N.W. wind, or take advantage of the land wind in the early part of the morning, which often occurs in fine weather when westerly winds prevail; or, lastly, she must warp out, in a light breeze or calm, to the entrance of the bay outside, and to a position from which she can make sail.

Water.

There are several small streams, on the eastern side of the Harbour, where water can be obtained, and it can also be had at high

* See NOTE A, page 170.

water from the two small rivers at the head of the inlet. The stones on the bar of this Harbour might be easily removed, and I ascertained, by boring, that the channel might be deepened to any extent that might be desirable.

ST. PANCRAS COVE, 9 miles W.N.W. from Cape St. Nicolas, *St. Pancras Cove.* being only 160 fathoms wide, between steep rocks, and open to the southward, with very deep water, is of no use to vessels. There are 32 fathoms in its entrance, shoaling gradually to 17 fathoms within a quarter of a mile of its head. The sea is never heavy in it, and a vessel might be saved there in time of need. It affords shelter to boats.

ENGLISH BAY, between Point St. Pancras and St. Giles Point, affords no good anchorage, in consequence of the great depth of water; a heavy sea rolls into it in easterly winds, and its shores are high and rocky. A vessel might anchor close to the shore on its west side, in 16 or 17 fathoms at low water, and be well sheltered from all but easterly winds; but she would be in great danger if a strong wind from that quarter came in, since there would be no possibility of weathering the eastern side of the Manicouagon Shoals during the flood tide.

56. Point St. Giles is $13\frac{1}{2}$ miles W. by N. from Cape St. *Point St. Giles.* Nicolas, and is high and rocky, like the coast to the eastward; while Manicouagon Point, which is $17\frac{1}{2}$ miles W.S.W. $\frac{1}{2}$ W. from Cape St. Nicolas, is low and thickly wooded, with a broad sandy beach, like the rest of the coast westward to Outard Bay.

This complete change in the character of the coast points out to a vessel her approach towards the dangerous Manicouagon Shoals.

The entrance of Manicouagon Bay lies between the above two *Manicouagon River.* points, and is all dry at low water, with the exception of the narrow channels which lead up to the river.

The principal channel is on the north side, and there is a *North Channel.* deep place, or large hole, in it, $1\frac{3}{4}$ miles long, from half to a quarter of a mile wide, and from 3 to 5 fathoms deep at low water, with muddy bottom. This large hole is close to Point *Anchorage Hole.* St. Giles, and extends $1\frac{1}{4}$ miles within it. Although this place appears completely open to easterly winds, no swell of consequence rolls into it, and I believe a vessel well moored on its north side within Point St. Giles would be in safety. But to get in there it

Manicouagon River. is necessary to pass over a bar formed by the eastern part of the Manicouagon Shoal.

Bar. This Bar extends out 2 miles to the eastward from Point St. Giles, it has 7 feet over it at low water, and from 14 to 19 feet at high water, according as it may be neap or spring tides. The outside of the Bar is extremely bold, there being 30 fathoms sandy bottom close to it, and 50 fathoms mud bottom at the distance of one mile. The Bar then sweeps round till it joins the Manicouagon Shoal, which consists of sand with occasional boulders, and which is dry at low water for nearly 5 miles out, in an E. by N. direction, from the northern end of Manicouagon Peninsula.

This is altogether too wild and dangerous a place to be of general use to vessels, but as, nevertheless, it might prove of use in time of need, I give the following brief directions for entering it.

Directions for the Anchorage Hole.

Bring Point St. Giles to bear W. by S., with Point St. Pancras, the eastern point of English Bay bearing north at the same time. Then steer directly for Point St. Giles; and when the head of English Bay bears north, and Point St. Pancras N.E., you will be close to the bar. Continue to run over the bar on the same course, W. by S., until the points on the west side of English Bay bear N. by E. $\frac{1}{2}$ E.; you will then be within 1 mile of Point St. Giles, and must keep away a couple of points to the southward along the southern edge of the Shoal, which dries at low water off that Point, until you open out the Points on the north side of Manicouagon Bay to the southward of Point St. Giles; then haul up again so as to pass that Point at the distance of a cable's length, and anchor half a mile within it, in 3 or 4 fathoms at low water.

Falls.

Six miles west from Point St. Giles, the shallow channels between the Shoals unite in the inner entrance of the River, which is there narrow and 4 fathoms deep. The Falls, where the River discharges a great body of water down a narrow and sloping channel between steep granite rocks, are 3 miles further up, in a N.W. direction, and a boat may approach close to them.

Tides.

The ebb runs out over the Manicouagon Bar to the eastward, at the rate of about $1\frac{1}{2}$ knots, and the flood is nearly as strong.

The MANICOUAGON SHOAL is of sand, with many large boulders scattered about its eastern and southern parts, and probably deposited there by the ice. The most eastern point of this dangerous and extensive Shoal is distant $2\frac{1}{2}$ miles from Point St. Giles, in an E.S.E. direction, and $5\frac{1}{2}$ miles E. by N. from the N.E. end of Manicouagon Peninsula. *Manicouagon Shoal. Eastern Point.*

The bearing of S.W. by S. from Pancras Cove passes along the eastern side of the Shoal, which is so bold that there are 60 fathoms of water at the distance of little more than $1\frac{1}{2}$ miles, and 40 fathoms at half that distance from the breakers. On this side the Shoal dries nearly out to its edge in low tides. The south point of the Shoal extends $2\frac{1}{2}$ miles to the southward of Manicouagon Point, and here only is there any sufficient warning by the deep sea lead. With Manicouagon Point on any bearing from N. to N.W. by N., 60 fathoms over a bottom of very fine sand will be found at the distance of $3\frac{1}{2}$ miles from the 3 fathom mark, to which the water shoals gradually, till close to it, where there are 17 fathoms. The Shoal dries out in low tides, in this part, and also further to the westward, from 1 to $1\frac{1}{2}$ miles from the beach. *Southern Point.*

The Shoal continues from its south point to the westward for a distance of 16 miles, the outline of its edge corresponding to the shape of the sandy shore as far as Outard Point, off which it extends to the southward $1\frac{1}{2}$ miles, and, filling up all the eastern part of Outard Bay, stretches out its western point fully $3\frac{1}{2}$ miles W. by S. from Outard Point. *Western Point.*

There is often a very heavy sea, particularly in a weather tide, off this Shoal, but all the terrific accounts which have been circulated of "strong and irregular eddies," in which vessels will not answer their helms during a fresh gale of wind, "and can with difficulty be kept from running on the bank, or driving against each other," are entirely unfounded. But without that exaggeration a shoal which extends so far from a low part of the coast, which is difficult to be made out at night, and which has such deep water close to it, must be sufficiently dangerous to demand the utmost prudence and vigilance of the seaman, without alarming him with imaginary perils. The tides are tolerably regular, and not very strong along the Shoal. I do not think that the rate of either tide exceeds 2 knots at any time, and I am certain that it is usually much less. But great rippings are met *Tides and Rippings.*

Manicouagon Shoal.

with occasionally, both near the shoals, and in the offing, where they are caused, as in other parts of the Estuary, by the unequal velocities or the opposing directions of the streams, as will be readily imagined when it is remembered that the current is always down on the south side, slack in the middle, and up during the flood on the north side of the Estuary. (Art. 15.) These rippings are very common off the eastern and southern parts of the Manicouagon Shoal, where I have observed them to move much faster than the streams of the tides, as was evident by their passing by the vessel in a calm. They often give to the tides the appearance of a rapidity which does not exist.

Outard Point.

OUTARD POINT is 11 miles to the westward of the south extremity of Manicouagon Point, and the shore between them is of low sandy cliffs, with a sandy beach.

Outard River.

OUTARD RIVER flows on the north side of the Point of the same name, and can be ascended by boats to the Falls, over granitic rocks, which are 7 miles, N.E. by E., from the Point.

Falls.

These Falls are only $1\frac{1}{4}$ miles from the Manicouagon River. The two rivers therefore form the low sandy country, between Points Outard and Manicouagon, into a great peninsula, which has probably been produced by the rivers in the course of ages.

The entrance to Outard River is by several intricate and narrow channels through the western part of the Manicouagon Shoal, and as there are only 2 or 3 feet of water through these channels at low water, for the distance of 4 or 5 miles, the place is useless to vessels, and therefore requires no further description.

White Water.

The water of this River holds a white earth suspended, and frequently covers the whole surface of Outard Bay, floating on the heavier sea water beneath, and giving the whole Bay the appearance of being shoal. A vessel sailing through this superstratum of fresh water displaces it, and leaves a blue streak in her wake.

Outard Bay.

OUTARD BAY, between Outard and Bersimis Points, has three small rocky islands in it, which appear as two from seaward, and serve to distinguish the Bay to strangers; they are far within the edge of the shoals, which extend quite round the Bay, and occupy the greater part of it, being a continuation of the Manicouagon Shoal. The water in this Bay is too deep close to the shoal for convenient anchorage, which is quite exposed to easterly winds.

Anchorage.

The anchorage is on the west side of the Bay, in 14 fathoms at low water, over muddy bottom, with Bersimis Point bearing

S.W. by S, $3\frac{1}{2}$ miles. Manicouagon Point will then be open *Outard Bay*. 3 or 4 degrees to the southward of Outard Point, the south side of which will bear E. by N., the first rocky point north-eastward of the river N. by W., and the vessel will be nearly half a mile from the 3 fathom edge of the shoal on the west side of the bay; small vessels may lie closer, in 7 or 8 fathoms.

In standing in for this anchorage with a westerly wind, beware of the bar of Bersimis River, which is extremely steep. If you can make out the first rocky point to the north-eastward of the River, and which bears from its entrance N.N.E., $4\frac{1}{2}$ miles, take care that it does not bear to the eastward of north, and you will clear the bar. When you have passed it, you may haul in to the northward into soundings, going no nearer than 10 fathoms.

Vessels may anchor for a distance of three-quarters of a mile on either side of the position which I have pointed out, either further out to the S.S.W., towards Bersimis Point, or towards the small islands to the N.E., but the berth which I have indicated is the best. The tides are not strong in Outard Bay.*

BERSIMIS RIVER enters the sea to the eastward, and $1\frac{1}{2}$ miles *Bersimis River*. N.E. from the south extremity of the Point of the same name. The south side of entrance of the River for more than three-quarters of a mile is of low and bare sand. The opposite point of entrance is also of sand, and bears N.N.W., at the distance of rather more than a mile from the south point, but this wide mouth of the River is closed by sands dry at low water, with the exception of a very narrow channel. The River within, for the first 3 miles, is wide and full of sand shoals.

The Bar is of sand, which dries in parts at low water, and *Bar*. shifts frequently, being completely exposed to southerly and easterly gales; it extends nearly $1\frac{1}{2}$ miles to the eastward of the south point of entrance. Directions for entering the River must therefore be useless; but it may be as well to remark, that within the bar the channel is always close to the south point of entrance, and keeps on that side through the wide part within, with a depth of 9 feet at low water. The depth that could be carried in over the bar, in the month of July, was 6 feet at low water, and from 13 to 18 feet at high water, according as it might be neap or spring tides.

* See NOTE B, page 170.

This River discharges a great volume of water, especially in the spring of the year, and the water is fresh enough for drinking, when the tide is out, 2 miles within its entrance.

Bersimis Falls. The Bersimis River is navigable to the Falls, which are 30 or 40 feet high, and over granitic rocks. These Falls are distant 30 miles N.W. $\frac{3}{4}$ N., in a direct line from the south point of entrance; but the distance is nearly 40 miles by following the windings of the river. The banks of the river are high and precipitous, being either of granite or cliffs of sand and gravel over clay. The basins and valleys between the hills are filled with these last-named deposits, which support a heavy growth of trees of the pine and spruce species. There is good timber to be met with occasionally. The breadth of the river varies from 100 to 300 fathoms, and its depth is usually from 2 to 5 fathoms: there is a place in which the depth amounts to 12 fathoms; but 2 fathoms is as much as could be carried up to the foot of the Falls.

Timber.

Tides in the River.

The stream of the flood tide is felt 10 miles up the river; and 6 miles up the channel is contracted by shoals of sand and boulders to the breadth of 50 fathoms for the distance of 1 mile. Through this narrow part the ebb runs 4 knots; above it, the rate of the current is from 1 to $2\frac{1}{2}$ knots. Boats could row up this River to the foot of the Falls, and a steamer could ascend it with ease; but the winds are generally too light and baffling between its high banks for a sailing vessel.

Bersimis Point.

57. **BERSIMIS POINT** is low, of sand, wooded with spruce trees, and difficult to be seen at night. On its east side, the low south point of the river extends to the distance of 2 miles from the trees, and the Bar $1\frac{1}{2}$ miles further; and to the southward, the sand shoal extends three-quarters of a mile from the sandy beach, yet it is so bold that the lead affords no warning, there being 60 fathoms muddy bottom at the distance of a mile from the edge of the shoal. On the east and west sides of the Point the shoals are equally steep, so that this Point is very dangerous, especially to vessels beating at night or in foggy weather. From the south extremity of Bersimis Point, Manicouagon Point bears E.N.E. $\frac{1}{2}$ E., 21 miles; and Point Mille Vaches S.W. by W. $\frac{1}{2}$ W., 29 miles. In all this last-named distance, if the extreme points be excepted, vessels will find, by reference to the chart, that the soundings off the shore afford some warning, although there are parts where great caution is necessary.

The tides are regular, but the flood is rather stronger than the ebb *Tides off Bersimis.* within 6 miles from the shore, where the rate of either, as far as I have seen, never exceeds $1\frac{1}{2}$ knots, and is often much less.

The low sandy shore continues $5\frac{1}{2}$ miles W. $\frac{3}{4}$ N., from Bersimis *Jeremy Island.* Point to JEREMY ISLAND, which is very small, rocky, and close to the shore. There is a trading post of the Hudson Bay Company on the main, the buildings of which can usually be seen, but if not, its position will always be known by some patches of white sand and clay cliffs, which are close to the eastward of the island. Vessels may stand in by the lead, and anchor off this place; but it is a bad anchorage, and the shoal water extends a mile out from the shore.

CAPE COLOMBIER, 5 miles from Jeremy, along a rocky and broken shore, in a S.W. by W. $\frac{1}{2}$ W. direction, is a rocky peninsula, *Cape Colombier.* with a small islet on its west side.

The GULNARE SHOAL, discovered by us in 1830, is a narrow *Gulnare Shoal.* ridge of granite rock, nearly 2 miles long, parallel to the shore, and having from 2 to 3 fathoms over it at low water. The S.W. end of this Shoal bears S. by E., and its N.E. end S.E. by E. $\frac{1}{2}$ E. from Cape Colombier, from which they are distant $1\frac{1}{2}$ miles. The inner or north side of Laval Island nearly on with Point Orient, the east point of the Baie de Laval, and bearing west, leads clear outside of this Shoal at the distance of 2 cables' length, and in 20 fathoms of water. It is very dangerous, there being 23 fathoms close to the S.W. end, and also along its southern side. There are 4 or 5 fathoms between it and the shore.

WILD FOWL REEF, S.W. by W. $\frac{1}{2}$ W., 4 miles from Cape *Wild Fowl Reef.* Colombier, is a large bed of rocks, extending three-quarters of a mile from the shore between Plongeur Bay and the Baie de Laval. There are 9 fathoms off this Reef at the distance of one-third of a mile.

PLONGEUR BAY, between that Reef and Cape Colombier, may *Plongeur Bay.* be known by a round and rocky peninsula on its west side. The inner part of this Bay is full of rocks dry at low water, and the whole Bay is shoal out to the line joining Wild Fowl Reef and Cape Colombier.

Vessels should be careful in standing in towards the part of *Approach to the shore.* this coast from Wild Fowl Reef to the Gulnare Shoal inclusive; 30 fathoms is quite near enough, as they will see by the soundings in the chart. But to the south-westward of the Reef, until

within 2 miles of Port Neuf, they may stand in to 6 fathoms at low water with safety.

Baie de Laval. The BAIE DE LAVAL, 4 miles west from the Wild Fowl Reef, and $8\frac{1}{2}$ miles N.E. by N. from Port Neuf, will be known by the rocky island in its mouth, and by the clay cliffs which commence $1\frac{1}{2}$ miles to the S.W. of it, and continue to within the same distance of Port Neuf.

This Bay within the island is all dry at low water. Vessels may safely stand in towards it, the water shoaling gradually from 10 fathoms, which is at the distance of $2\frac{1}{2}$ miles from the shore.

There is a good anchorage in 6 or 7 fathoms, over clay bottom, off the clay cliffs abovementioned.

Port Neuf. At PORT NEUF there is a fur-trading and salmon-fishing establishment, belonging to the Hudson Bay Company, who have a lease of the seignory of Port Neuf. At this post, which stands upon a steep sandy bank, and is 4 miles to the N.E. of Point Mille Vaches, there is a small wooden church for the Indians, a dwelling-house, a store, and several smaller buildings. These can readily be seen by a vessel off the coast.

S.S.E. from the church, and distant nearly three-quarters of a mile, is the S.W. end of a low and narrow sandy peninsula, with a clump of pine or spruce trees upon it, and which extends nearly 2 miles to the N.N.E., where it joins the sand and clay cliffs, which have been previously mentioned.

*Port Neuf
River.*

The entrance to Port Neuf River is from the S.W., and between this sandy peninsula and the post on the main land, but is so shallow that a boat cannot enter it at low water. At the junction of the peninsula with the sand and clay cliffs, the River turns abruptly inland: its sandy channel is too shallow for a boat at low water below that turn; and at the distance of $1\frac{1}{2}$ miles above it rapids commence. From 7 to 12 feet water may be carried in at high water between the peninsula and the main land, according as it may be neap or spring tide, and a small vessel may lie safely aground on the sand.

Sand Patch.

E. by N. from the S.W. end of the sand and clay cliffs, N.E. by E. $\frac{1}{4}$ E. from the church at Port Neuf, and $1\frac{1}{2}$ miles from the cliffs, lies a patch of sand, with $3\frac{1}{4}$ fathoms least water, which might be dangerous to a large vessel in a heavy sea. This may be considered as the commencement of the Port Neuf and Mille Vaches Shoals.

The PORT NEUF SANDS are exceedingly steep on every bearing *Port Neuf Sands.* to the southward of east from Port Neuf, and to the eastward of south from Point Mille Vaches. Off Port Neuf they extend three-quarters of a mile out from the sandy peninsula.

Half way between Port Neuf and Point Mille Vaches is the widest part of these sands, which there extend $1\frac{1}{2}$ miles from the beach. There are from 20 to 30 fathoms close along their edge, and from 40 to 50 fathoms at the distance of 1 mile.

58. POINT MILLE VACHES is low, sandy, and wooded with spruce trees. From its south extremity the N.W. reef of Bicquette *Mille Vaches Point.* bears S.S.E. $\frac{1}{2}$ E., $12\frac{1}{2}$ miles; and the navigable breadth of the channel is diminished by the Mille Vaches Shoals to little more than $11\frac{1}{2}$ miles. As the dangers on either side are so bold, and as the course of a vessel running up the Estuary must be ever more or less uncertain in consequence of the set of the tides and currents, this pass is justly considered dangerous to a vessel running up in dark nights or foggy weather. The only safe mode of proceeding, under such circumstances, is that which I have recommended in art. 25.

The BAY OF MILLE VACHES, on the west side of the point of *Mille Vaches Bay.* the same name, is very large, with several small rivers, which descend by falls or rapids down the granitic shores. The principal of these rivers is the Sault de Mouton, $4\frac{1}{2}$ miles west from the Point, and which has a fall of 80 feet visible from a vessel when abreast of it. All the interior of this Bay is occupied by shoals of sand, mud, and large boulders, which dry at low water.

In the western part of it the shoals are extremely steep and dangerous, but from where the Sault de Mouton bears north to where Point Mille Vaches comes upon the same bearing, comprising a space of $4\frac{1}{2}$ miles, there is a complete warning by the lead; the depth being 30 fathoms, upwards of 2 miles from the 3 fathom edge of the shoals.

There is anchorage in this Bay in 15 fathoms, sand and mud *Anchorage.* bottom, with the south extremity of Point Mille Vaches on with the inner or north side of the pine trees on the peninsula of Port Neuf, bearing N.E. $\frac{1}{2}$ E., at the distance of 2 or 3 miles from the Point, and three-quarters of a mile from the shoals. The shelter is from S.W. by W. round by north to N.E. by E. The ground is good, and there is not much tide.

The course and distance across the Bay of Mille Vaches to two large rocks, which have three small ones nearly a mile to the S.W. of them, and are called the Esquamine Islets, is S.W. $\frac{1}{4}$ W., nearly 12 miles.

*Esquamine
Islets.*

The coast to the south-westward, from the Esquamine Islets to Little Bergeron, a distance of 16 miles, consists of granite rock, steep and bold, and free from all danger, excepting a flat which occupies a bay on the west side of Cape Bondesir, but which does not extend above a quarter of a mile outside of a line joining the points of the bay, and is consequently very little in the way of vessels. There are upwards of 50 fathoms water close to the rocks along this part of the coast.

Tides.

The tides are regular, increasing in strength as we approach the comparatively narrow pass on either side of Red Islet. The flood is the stronger tide of the two, the ebb being deflected over towards the southern shore by the stream out of the great river Saguenay. The flood does not extend above 5 or 6 miles off the north shore below Bergeron, and the closer to that shore the stronger is the stream. Its rate at Point Mille Vaches, where it does not extend far off-shore, is from $1\frac{1}{2}$ to 2 knots; and off Bergeron from 2 to 3 knots, in spring tides.

*Great and
Little Berge-
ron Coves.*

GREAT and **LITTLE BERGERON** are two coves separated by a point. They are both full of large boulders, which dry at low water, and have small streams at their heads. Little Bergeron is of the two the most to the S.W. From it, Green Island light bears S. by E. $\frac{1}{4}$ E., $11\frac{1}{2}$ miles; and the Saguenay Cliffs, at the east point of entrance of the river, S.W. by W., $5\frac{1}{2}$ miles.

I terminate this chapter at Little Bergeron, because the shoals off the entrance of the Saguenay, and the passage between them and Red Islet, belong, according to the arrangement which I have adopted, to Part the Second of these Directions.

CHAPTER VII.

THE NORTH COAST OF THE GULF OF ST. LAWRENCE, FROM LAKE ISLAND TO THE RIVER ST. JOHN, INCLUDING THE MINGAN ISLANDS.

59. General Description of the Coast, from Lake Island to Natashquan Point.—60. Whittle Rocks, Wolf Bay and Islands.—61. Coacocho Bay and its Harbours.—62. Olomanosheebo, Wash-shecootai, and Musquarro.—63. Kegashka Bay. Kegashka River, and the Coast between it and Natashquan Point. Mont Joli. Cod Banks.—64. General Description of the Coast from Natashquan Point to the Mingan Islands.—65. Natashquan River, Little Natashquan Harbour, Washtawooka, Agwanus, and Nabesippi Rivers. Pashasheebo. Mushkoniatawee. Washatnagunashka. Watcheeshoo. Quetachoo-Manicouagon. Peash-tebai. Appeeletat.—66. The Mingan Islands, general Description.—67. St. Genevieve and Hunting Islands. The Saints. Bowen Rocks. The Harbours of St. Genevieve and Betchewin.—68. Charles Island and the Bays on either side of it. Charles Harbour.—69. Clear-water Shoals. Walrus and Sea-Cow Islands, with the Channels leading to Esquimaux Harbour. Green, Gull, Esquimaux, Fright, and Quin Islands, with their Reefs, and the Channels between them. Quin Channel.—70. Esquimaux Harbour.—71. Niapisea Island. Quarry Island, and Cove. Quarry Channel. Large Island. Middle Reef. Birch Islands. Mingan Island. The Perroquets.—72. Mingan Channel, between the Islands and the Main. Mingan Harbour. Long Point to St. John River.

59. FROM Cape Whittle, the S.W. point of Lake Island, to Natashquan Point, the course is S. $85^{\circ} \frac{1}{2}$ W. true, or N. 66° W. magnetic, and the distance 63 miles. With the exception of the first 13 miles eastward of Natashquan Point, where the shore is of sand, this coast is of granite, which rises into steep hills and ridges, with rounded summits, having between them morasses and stagnant ponds. The mainland is seldom higher than 200 feet, even in the heads of the bays, and it diminishes in height towards the sea, as do also the innumerable small islands, islets, and rocks, which fringe the coast, and which in some parts extend fully 5 miles from the nearest point of the mainland. The islands are bare of wood, and so also is the main, excepting up the bays

*Coast from
Lake Island
to Natashquan.*

or where sandy tracts occur, which are always covered with a thick growth of spruce, with occasional birch and poplar.

*Difficult to
recognise.*

Seen from the distance of 4 or 5 leagues, this coast presents an outline so little diversified, that it is nearly impossible to distinguish one part of it from another; and it is only when a vessel approaches within 3 or 4 miles of the outer rocks, that its broken and dangerous nature becomes apparent.

*The Rocks are
steep too.*

The outer rocks, both above and under water, are so bold that there is no warning from the use of the hand-lead; but, there are soundings with the deep sea-lead in moderate, but irregular, depths, off every part of this coast. These deep water soundings are too irregular to admit of a concise description; I must, therefore, refer to the chart, with the remark, that they are sufficient to warn a vessel of her approach towards danger at night, or in fogs, since these depths do not amount to 50 fathoms at any less distance than 5 miles from the outer rocks.

Tides.

The tides are weak, irregular, and influenced, both in their strength and direction, by the winds. For the time of high water on the full and change days, and the rise of the tide at different places, see Table at the end of the book.

Whittle Rocks.

60. There are many small rocks above and under water, off to the southward and westward from Cape Whittle. The two outermost of these, which are half-tide rocks, are distant from the cape $2\frac{1}{2}$ miles, and are called the WHITTLE ROCKS. All these rocks are steep, with from 20 to 40 fathoms of water between them, and small fishing and eggng schooners find their way among them, as they do almost everywhere among the islands and rocks of this coast, being guided by the eye; for every danger upon which such small vessels would strike can be seen in clear weather.

Wolf Bay.

WOLF BAY, the first to the westward of Cape Whittle, is 6 or 7 miles deep. There is plenty of water in its intricate channels, and no dangers that do not show, but a number of rocks and ledges extend across its mouth from Cape Whittle to Wolf Island, and are so scattered about that no directions would be of the least use. If ever any circumstances should render it desirable for a vessel to enter so dangerous a place, it can only be done by looking out for the ledges from the mast-head, or fore-yard, in fine clear weather, or by avoiding the broken water when there is a heavy sea running.

Wolf Island may be easily recognised, being higher and larger *Wolf Island*. than the outer islands usually are off this part of the coast. It is about three-quarters of a mile long, and makes in two hills, which are about 150 feet high.

Outer Islet is small, low, and about 1 mile further off to the S.W. *Outer Islet*. than Wolf Island. As its name implies it is the outermost of a chain of islands, which extends 4 or 5 miles out from the point of the mainland dividing Wolf and Coacocho Bays. It bears W.N.W. $\frac{1}{2}$ W., 7 miles from Cape Whittle.

61. COACOCHO BAY is the only place affording anchorage *Coacocho Bay*. to large vessels upon this part of the coast. It is not at all difficult of entrance, although the number of islets and rocks in every direction make it appear so. There is an excellent harbour in the head of the bay, called the Basin, and another formed by an arm running into the E. by N. and named Tertiary Shell *Tertiary Shell Bay*. Bay, which is equally safe. Further out than these harbours the bay is more than half a mile wide, and quite sufficiently sheltered from the sea for the safety of any vessel with good anchors and cables. Coacocho means a great owl.

To enter this bay, attend to the following description and directions; Outer Islet, Wolf Island, and the islets and rocks between them and the mainland, may be considered as forming the south-eastern side of the bay; and the Audubon Islets and Rocks, as forming the north-western side of the bay. The entrance of the bay is, therefore, between the two extreme points, which bear from each other N. by W. and S. by E., and are distant about $2\frac{1}{2}$ miles.

There are two small and dangerous ledges outside, off the entrance of the bay. The first, which is called the South Breaker, *South Breaker*. shows only in heavy weather, and has 12 feet least water. It bears W.N.W. $\frac{1}{4}$ W., 2 miles from Outer Islet, and there is a clear channel between it and the islet. It lies further out than any other danger off this division of the coast, and has from 18 to 20 fathoms of water all round and close to it.

The S.W. Breaker has only 3 feet least water, and bears N.W. *South-West Breaker*. by N., $2\frac{1}{2}$ miles from the South Breaker, and west, $2\frac{1}{2}$ miles, from Point Audubon. There is a clear and deep channel between these two ledges, which may be easily avoided by the chart, or if the weather be clear they will be readily seen from the fore-yard of any vessel.

*Directions for
Coacoacho Bay.*

In running for Coacoacho Bay from the S.E., steer so as to leave Outer Islet, and the rocks to the northward of it, about 300 fathoms to the eastward of you. When abreast of these rocks, you will see, right ahead, a chain of low rocks, which project to the S.W. from Emery Island. Bring the point of this chain to bear N.E. $\frac{3}{4}$ N., when it will appear on with the extreme point of the mainland on the N.W. side near the head of the bay. Steer in upon this leading mark, or bearing, until you are past some rocks which lie 600 fathoms from the east side of the Audubon Islets. These rocks are dry at low water, and can always be seen. You must leave these rocks on your larboard or N.W. side, and, having passed them, haul to the northward a little, so as to leave the Emery Rocks, which are quite bold, on your S.E., or starboard side. Their outer point bears N.N.E. $\frac{1}{4}$ E., 3 miles from Outer Islet, and when up to them you will see the bay open before you, and clear of danger. The bottom, outside, is either of rocks or sand, with a depth of from 12 to 30 fathoms; but as soon as you arrive within the points of the mainland, just within Emery Island, you will find mud bottom, with a depth of from 10 to 20 fathoms. The further in, the better the ground, and the less the swell with S.W. winds, which are the only winds that send any swell into the bay.

*Tertiary Shell
Bay.*

If you wish to run into Tertiary Shell Bay there is nothing in your way excepting a small rock above water, a quarter of a mile within the entrance, which you must leave on your starboard hand; and which, like the shores on either side, is quite bold. This bay is not more than 120 fathoms wide, half a mile from the entrance, but it becomes wider within, with from 5 to 11 fathoms water over mud bottom, and is there perfectly land locked.

*The Basin of
Coacoacho.*

In running in for the Basin keep the N.W. side of the bay on board, leaving the entrance of Tertiary Shell Bay, and a point of low rocks to the northward of it, which are nearly joined to the shore, to the eastward, until you approach within half a mile of the island in the head of the bay. You must then steer over to the eastward, towards that island, to avoid a shoal of boulder stones which extends nearly 200 fathoms off the west side of the bay. The channel between this shoal and the island is only 100 fathoms wide, but deep enough for the largest ships. Give the island a berth of 50 fathoms, leaving it to the eastward or on the starboard hand, and as you pass through you will deepen your

water from 9 to 19 fathoms, the latter depth being just within the island. As soon as you are past the inner end of the island haul to the N.W., into the mouth of a small bay; and you will soon shoal your water to 8 fathoms, muddy bottom, where you must anchor, and you will be perfectly sheltered from every wind. The basin becomes quite shoal immediately above this anchorage, where there is another island lying in the entrance of Coacocho River.

On the east side of the entrance of the river there is a house at which two men, who are engaged in the fur trade and salmon fishery, generally reside. This small river flows through a wide and shallow channel full of boulders; its shores are wooded with spruce trees, and water may be obtained near the trading post.

Coacocho River.

Wood and Water.

In running for Coacocho Bay from the westward, you may either pass between the S.W. and South Breakers, by bringing the inner or N.E. end of Wolf Island to bear east, and steering for it; or by bringing Outer Island to bear nothing to the southward of east, and running towards it, until you are within less than a mile, when you may haul in for the Emery Rocks, as before directed.

South and S.W. Breakers.

There is very little stream of tide in Coacocho Bay, but a weak and irregular stream of flood and ebb sets through between the islands.

Tides.

62. The coast, for the first 4 leagues westward of Coacocho, is formed of innumerable islets and rocks to OLOMANOSHEBO, or Paint River, which is called also by the Canadians, "La Romaine." This is a considerable river, falling 20 feet over granite into the head of a bay 4 miles deep, but so shoal that boats can scarcely enter it at low water. There is a trading post of the Hudson Bay Company on the east side near the falls, neither of which can be seen from the sea, being hidden by the islands; but the place may be known by the low sandy cliffs, thickly wooded with spruce trees, on either side of the entrance of the bay.

Olomanoshebo River.

Treble Islet, and the Loon Rocks, lie to the westward, the latter at the distance of 6 miles from the above bay. The Loon Rocks, which can always be seen, are distant 3 miles from the nearest point of the mainland, and are the outermost danger off this part of the coast.

Treble Islet. Loon Rocks.

WASH-SHECOOTAI (which means Cloudberry) Bay lies 10 miles to the westward of Olomanoshebo, is $2\frac{1}{2}$ miles wide, and has off

Wash-shecootai Bay.

Cloudberry Point.

its entrance several small rocky ledges that make it very difficult of entrance. Cloudberry Point is the west point of this bay, and is formed by the mainland. The east point of the bay is formed by small rocks and islets. At the distance of 3 miles within Cloudberry Point this bay contracts to a very narrow inlet, having several rocks and islets in it, and from 4 to $2\frac{1}{2}$ fathoms water over muddy bottom, for the first 4 miles up; after which it becomes shallow for 4 miles further, to the falls of a considerable river, where there is a trading post and salmon fishery of the Hudson Bay Company.

This inlet is completely open to winds from the southward and westward, and affords scarcely any shelter for the first 5 miles within Cloudberry Point. Vessel of considerable burthen might find shelter in it in time of need, but it is too intricate a place for the general purposes of navigation, or for any written directions to be of avail. Coasting schooners, which know where to look for all the ledges, enter it by keeping a person at the mast-head, or in the rigging.

Musquarro River.

MUSQUARRO RIVER, where there is a Hudson Bay Company trading and fishing post, is $4\frac{1}{2}$ miles westward of Cloudberry Point, and is situated 3 miles within the west point of a bay, full of small islets and rocks.

This river becomes rapid a short distance within the entrance; 6 feet can be carried in at low water, but it is a very intricate and dangerous place; useless excepting to boats, or very small schooners. It will be known by the houses which are on the east side of the entrance, and also by a remarkable red and precipitous ridge of granite, about 200 feet high, and about 2 miles to the westward of the river.

Curlew Point.

*Curlew Point, at half a mile off which there are several low bare rocks, and ledges which always show, is $4\frac{1}{2}$ miles to the westward of Musquarro, and it is the east point of Kegashka Bay.

Kegashka Bay.

63. KEGASHKA BAY, situated between Curlew and Kegashka Point, is 3 miles wide, and $1\frac{1}{2}$ miles deep. In the western half of this bay there are several small islets, too wide apart to afford much shelter from the sea. It is only in the N.W. corner of the bay, within Kegashka Point, that a vessel can be secure from southerly winds; there is room there for several small schooners, but for only one vessel of the size of a sloop of war, and she must

be moored with an open hawse to the eastward, with a third *Kegashka Bay*. anchor on shore to the S.W., so as to be able to haul in close under the point when it blows hard from the southward. The depth of water within the islets is from 4 to 6 fathoms, over fine sandy bottom.

Altogether, I consider this as a wild place, although small vessels may contrive to shelter themselves there sufficiently to run but little risk during the summer months.

Wood and water may be obtained without difficulty in the western part of the bay. *Wood and Water.*

KEGASHKA POINT is formed by an island, separated from a *Kegashka Point*. rocky peninsula by a very narrow channel, dry at low water; and the peninsula is united to the mainland by a narrow sandy isthmus covered with grass. Both the island and peninsula are distinguished by being partly covered with spruce trees. There are also a few spruce trees on an islet, three-quarters of a mile to the westward of the point, and as no other islands on this part of the coast are wooded, the bay may be recognised by that circumstance. There is a fine sandy beach, and low sandy cliffs in the N.W. corner of the bay: and there are also similar cliffs for about a mile to the westward of the isthmus above mentioned. This sandy tract is densely wooded with dwarf spruce, another circumstance which serves to distinguish this bay, and is the origin of its name, which signifies impenetrable woods. On a near approach the place will also be known by Green Island, which is of low granite covered with grass, and is the outermost and largest islet sheltering the bay: being about 300 fathoms in diameter, and situated three-quarters of a mile to the eastward of Kegashka Point. There are several small islets and rocks within, and also to the eastward of Green Island, and one small and low black islet between it and the inner part of Kegashka Point.

The safest channel into Kegashka Bay is between this last-named islet and Kegashka Point, 170 fathoms wide, and 8 fathoms deep. The other channels have dangers in them, but this is quite clear, and the only direction necessary, when coming from the westward, is to give the south extremity of Kegashka Point a berth of a quarter of a mile, or to go no nearer than 8 fathoms: then run along the east side of the point, which is quite bold, leaving all the islets on your starboard hand. A distance of three-quarters of a mile on a N.E. $\frac{1}{2}$ N. course will

Kegashka Bay. bring you to the narrow channel before mentioned, between the westernmost islet and the inner end of Kegashka Point. Haul round the latter to the north-westward, at the distance of half a cable, and when within it, not more than the same distance, let go your anchor in 5 fathoms, and secure your vessel by mooring, as has been before mentioned.

Approach from the eastward.

When approaching Kegashka from the eastward, give the low and small islets off Curlew Point a berth of half a mile, to avoid the ledges off them, which dry at low water: then steer N.W. $\frac{1}{2}$ N., or so as to pass outside of Green Island, going no nearer than 100 fathoms. Continue on that course till the inner or N.E. extremity of Kegashka Point bears north, which will be a distance of rather more than $3\frac{1}{2}$ miles from the ledges off Curlew Point; then haul in, and pass between the point and the westernmost islet, as before directed, giving the south side of that islet a berth of at least a cable's length.

Kegashka Bay has this advantage, that there are no ledges, or other dangers off its entrance: so that a vessel is no sooner outside of Kegashka Point than she has a clear sea before her.

Kegashka River.

KEGASHKA RIVER has falls 40 feet high, and a fishing station of the Hudson Bay Company a mile within its entrance; neither the falls nor the house can be seen from the sea. This river, affording shelter only for boats, is 3 miles to the westward of the bay of the same name.

At the distance of $2\frac{1}{2}$ miles further westward fine sandy beaches, in front of sandy cliffs, 70 or 80 feet high, and a country thickly wooded with spruce trees, commence and continue to Natashquan Point, a distance of $13\frac{1}{2}$ miles.

Shoal to the Eastward of Natashquan Point,

Three miles westward from the east end of the sandy beach, and $1\frac{1}{2}$ miles off shore at Long River, (a small stream,) there is a shoal which has not been examined, but on which breakers have been observed. Go no nearer to the shore than 17 fathoms, and you will avoid it.

and Cod Bank off the Point.

One and a half miles to the S.W., from the S.W. extremity of Natashquan Point, lies a small Cod Bank, with little more than 4 fathoms at low water, over gravel bottom.

Mont Joli.

MONT JOLI, mentioned in all former remark books, has no existence, at least there is no mountain, nor even anything that deserves the name of a hill; but near the termination of the sandy cliffs, which end at the S.W. extremity of Natashquan

Point, the sandy ridge with spruce trees rises into a slight mound, a very little higher than the rest of the country. This is Mont Joli; but so little remarkable in its appearance that we should not have noticed it, had it not been for its name.

Parallel to the coast from Musquarro to Natashquan, and at *Cod Banks*, distances varying from 6 to 11 miles, there are banks of sand, gravel, and broken shells, on which the depth of water is various, between 24 and 40 fathoms. There is more than 50 fathoms of water in some parts, between these banks and the shore. Codfish are often caught in abundance upon these banks, principally by American schooners.

The remarkable sandy promontory of Natashquan Point is *Natashquan Point*, the most southern point on the north coast of the Gulf to the eastward of the Seven Islands, and seems naturally to separate the eastern division of the coast, which has been the subject of the preceding articles of this Chapter, from that further to the westward. As a concluding remark to the above account of the eastern division, it may be said that though there are few coasts more dangerous either to a vessel unacquainted with its nature, or unaware of its proximity in a dark night, or thick fog; yet with the assistance of the chart, due caution, and a constant use of the deep sea-lead, it may be approached with safety; and that a vessel may even stand close in to the outer rocks and breakers on a clear sunny day, provided there be a trusty person aloft to look out for shallow water, for the bottom can be seen in 4 or 5 fathoms of water.

64. From the south extremity of Natashquan Point, the east *Coast from Natashquan to the Mingans*, point of Anticosti bears S. $\frac{1}{2}$ E. true, 57 miles: so that the next division of the coast, which shall now be described, may be considered as forming part of the north shore of the channel to the northward of Anticosti. From the south extremity of Natashquan Point to Collins Shoal, the outer danger off St. Genevieve Island, the course is N. 84° $\frac{1}{2}$ W. true, or N.W. by W. magnetic, 52 miles. The coast included in this distance is low near the sea, rising a short distance back into mounds and ridges, but nowhere exceeding 400 feet in height. It is composed of primary rocks, with the exception of a sandy tract at the Agwanus and Nabesippi Rivers. The sandy tracts are always thickly wooded with spruce trees, and the country generally is here less bare than it is further to the eastward.

The coast is broken into numerous coves and small bays, affording shelter everywhere to boats, and occasionally to very small schooners. The small and bare islets and rocks are innumerable along it, but nowhere extend further out from the points of the mainland than 2 miles.

When there is a heavy sea running, all these dangers show, or they can be seen from the mast-head in clear weather; but under other circumstances, 20 fathoms is as near to them as a vessel ought to approach, that depth being in many places not more than a mile from the outer ledges.

The banks of sand, gravel, and broken shells, which extend off this coast for many miles, and the deep water channel between them and Anticosti, have been already mentioned in art. 22; and the soundings upon them are too irregular to admit of any other than the general description there given of them. I must therefore refer to the charts, in which the various depths and nature of the bottom are given in such a way as cannot fail to be of great assistance to vessels navigating this channel.

Current.

The current down along the coast in westerly winds has also been mentioned in articles 17 and 22; its rate seldom exceeds half a knot, and is usually much less, so that a vessel can always make way to windward in moderate weather.

Tides.

In shore there are weak tidal streams too irregular to be depended upon. It is however important to remark, that the flood draws strongly into Natashquan River, and the bay at Little Natashquan; while the ebb sets strongly off Natashquan Point to the S.E., and causes a very heavy sea upon the banks off it, in southerly winds.

On approaching St. Genevieve, a strong in-draught of the flood towards the channel, between that island and the main, will be experienced; and the ebb will be found setting strongly out in the contrary direction: that is, to the S.E. The rate of these streams seldom exceeds a mile per hour.

Natashquan River.

65. NATASHQUAN RIVER (the name signifying "where the seals land") enters the sea on the west side of the point of the same name, and 3 miles north-westward from its south extremity. The mouth of the river, between low sandy points, is fully a mile wide, but nearly the whole of this space is occupied by a low sandy island, having narrow channels on either side of it. The northern channel is nearly dry at times, but the southern one has

a depth of 6 feet at low water, and from 9 to 11 feet at high water, according to neap and spring tides. There is the same depth within, and small schooners may lie alongside the steep sandy bank, where the houses of the Hudson Bay Company's trading and fishing post stand, on the south side of the river, half a mile within the entrance. The bar of sand, on which there is usually a heavy surf, extends out three-quarters of a mile, and is exceedingly steep to sea-ward, where 20 fathoms will be found within a quarter of a mile. Codfish are taken in great numbers off this bar in the month of June, and the river abounds with salmon. Above the trading post the river is full of sand-banks, dry at low water, and only navigable for boats for a few miles to the first rapids; above which it is said to be lost in a great morass, about 12 miles inland from the entrance. It discharges a great quantity of water in the spring of the year. The sandy beach continues *Little Natashquan Stream.* for $3\frac{1}{4}$ miles to the N.N.E. of the entrance, terminating at the mouth of a small stream, called the Little Natashquan, which admits boats only at high water, and which is close to the eastward of the harbour of the same name.

LITTLE NATASHQUAN HARBOUR, formed by a number of islets *Little Natashquan Harbour.* and rocks, is only fit for vessels not exceeding 100 tons, although it has water enough for a sloop of war. The entrances, of which there are two, formed by a reef of rocks in the centre, are not more than 90 fathoms wide, between reefs, the extent of which under water cannot be seen, because the water is discoloured by the dark streams of the neighbouring rivers.

The depth that can be carried in at low water by the west channel is 3 fathoms, and 5 fathoms by that which is between the central reef and the islets on the east side. The space within the reefs in which vessels can ride in from 3 to 5 fathoms, over sand and mud bottom, is only 250 fathoms in diameter. This anchorage is defended by the main and islets from all winds excepting the S.W., in which direction there are reefs of rocks, some parts of which are always above water. In a strong S.W. wind, some sea comes over these reefs at high water, but never enough to endanger a vessel during the summer months. There are several rocky patches, with from $2\frac{1}{2}$ to 3 fathoms off the harbour's mouth; these, with the want of space to work in, and the difficulty of getting out with the prevailing southerly winds of summer, render this place of little use for the general purposes of navigation; but

*Natashquan
Harbour.*

it is a valuable harbour for the fishermen, whose schooners, of from 30 to 100 tons, are well suited to the size and nature of the place, which is contiguous to excellent fishing ground, and affords every facility for drying fish. The entrance of this harbour bears N. by E., 4 miles, from the southern entrance of Natashquan River, and a vessel, being off the bar of that river in 20 fathoms, should steer N.E., by N., nearly parallel to the sandy beach. When she has run rather more than 3 miles, and has decreased her depth of water to 12 fathoms, she will be about half a mile from, and will see the islets and rocks, which, commencing at the termination of the sandy beach, lie off the entrance of Little Natashquan Stream, and form the east side of the entrance to the harbour. The westernmost of these islets is much larger than those which lie further to the S.E., between it and the termination of the sandy beach. Bring the west point of that island to bear N.E. by N., in 12 fathoms of water, and the southernmost of the rocks at the termination of the sandy beach will bear E. $\frac{1}{2}$ N. From this position, by ascending the rigging for the purpose, you will be able to make out the reef on the west side of the harbour, which extends rather more than half a mile, S.W. by S. from a rather high and round-backed islet of grey granite, with a wooden cross upon it. This islet will bear N. by E. $\frac{1}{2}$ E. from the position above indicated, and the central reef, some part of which is always above water, will be seen between it and the islets and the point of the main, which, together, form the east side of the harbour. Steer N. by E. $\frac{1}{2}$ E. for the islet with the cross on it, until abreast of the outer part of the reef to the westward, which will be distant a long cable's length, and you will be in about 7 fathoms water. Change your course now sufficiently to the eastward, to pass on that side of the central reef which you may prefer, giving its rocks above water a berth of not less than 60 fathoms, if you take the west channel. The central reef is quite bold to the southward, and also on its east side, so that you may approach it within 20 fathoms when entering by the east channel; but you must remember, in hauling round its north and N.E. ends, that it extends 70 fathoms under water from the rocks, which always show towards the centre of the harbour. The best berth to anchor in is in 4 fathoms, sand and mud bottom, with the rocks above water of the central reef, bearing S.S.W. $\frac{1}{2}$ W., distant 180 fathoms: then the cross will bear

N.W. by W. $\frac{1}{2}$ W., and the vessel will be nearly in the centre of the harbour.

WASHTAWOOKA (CROOKED) BAY, 5 miles north-westward of *Washtawooka Bay*. Little Natashquan, is full of small islets, rocks, and ledges, affording shelter to shallops and boats. It is an intricate and dangerous place, and may be known by Shag Islet, a large black rock lying off it, and further out than the rest, being $1\frac{1}{2}$ miles S.S.E. from the projecting point of the main.

AGWANUS RIVER, 10 miles north-westward of Little Natashquan, is a large stream, having rapids and falls $1\frac{1}{2}$ miles from the entrance, which is narrow, and 6 feet deep at low water. There is no bar, but many small rocks, both above and under water, lie off its mouth to the distance of $1\frac{1}{2}$ miles, and render the approach extremely dangerous. The east point of entrance is of rock, the other of sand, and there is a small islet, three-quarters of a mile from the river's mouth. From 9 to 12 feet can be carried up to this islet, above which the river expands into a basin, half a mile wide, and 5 fathoms deep, close up to the foot of the rapids. There is sandy beach for $1\frac{1}{4}$ miles to the eastward of this river, and also westward of it to Nabesippi. *Agwanus River, and Basin.*

NABESIPPI (MAN'S) RIVER, 5 miles north-westward from the *Nabesippi River*. Agwanus, enters the sea at the extremity of a sandy point, $17\frac{1}{2}$ miles N.W. $\frac{1}{2}$ N. from the entrance of Natashquan River. The Nabesippi is a much smaller river than the Agwanus, and will only admit boats in fine weather. On the west bank, a short distance within the entrance, stands a house and store, being a trading post of the Hudson Bay Company, which can be readily seen from the sea.

Pashasheeboo, Mushkoniatawee, and Washatnagunashka, are *Pashasheeboo Bay*. small bays, full of small islets and rocks, which render their entrances so difficult and dangerous, that no directions would be of the least avail. They are occasionally, but not often, entered by small coasting schooners intimately acquainted with the coast, and none but those who know every rock and ledge could either distinguish them, or take a vessel in. The first named is open to the S.E.; the second, less intricate than the other two, is 200 fathoms wide, and 5 fathoms deep in the entrance, with an equal depth within. It is open to the southerly winds, but is nevertheless tolerably secure for small craft, which may lie close to the rocks. The third is $1\frac{1}{4}$ miles wide, with a chain of rocks above *Mushkoniatawee Bay. Washatnagunashka Bay.*

and under water across its mouth, not large enough, or close enough to afford much shelter, yet too close and too numerous for a vessel to find her way through without great difficulty and danger. Three fathoms can be carried in, and there are 4 and 5 within.

Watcheeshoo Hill.

WATCHEESHOO, 18 miles N.W. by W. from Nabesippi, and 14 miles E.S.E. from St. Genevieve Island, is a hill of granite, 127 feet high, and bare of trees. It is a peninsula, but appears like an islet, higher than the rest, when seen in a vessel from a distance. There is a fishing post of the Hudson Bay Company in a cove among the rocks, to the westward of it. Watcheeshoo and the Saddle Hill, which is 374 feet high above the sea, are very remarkable, and serve to point out to a vessel her position off the coast. The latter is situated 6 miles inland from the former, in a north direction.

Saddle Hill.

Quetachoo-Manicouagon Bay.

Quetachoo-Manicouagon, and Peashtebai, are too contiguous bays, 4 miles north-westward of Watcheeshoo. The first is the most to the eastward, $2\frac{1}{2}$ miles wide, and from 3 to 14 fathoms deep, but so full of rocks and ledges as to be useless, excepting to the smallest schooners. It is open to the westward. The other is a much smaller bay, capable of affording shelter only to boats, and open to the southward.

Peashtebai Bay.

Appeeletat Bay.

APPEELETAT is a bay full of rocks, of no use to vessels, because of the ledges under water off its entrance, and also within. Four fathoms can be carried into this bay, which is not used even by small craft, because there is an excellent harbour within St. Genevieve Island, the S.E. point of which is distant only 3 miles from it, in a S.W. by W. direction.

The whole of the dangerous coast which has passed in review in the foregoing articles of this chapter was surveyed for the first time by us, during parts of the years 1832 and 1833. Previous to that time there were no charts of it that deserved the name; the principal points were not laid down within 10 miles of their true position, even in latitude; and the names of the various bays and rivers were for the most part unknown.

THE MINGAN ISLANDS.

Mingan Islands.
Formation.

66. The Mingan Islands are of limestone, containing ammonites, orthoceratites, and other organic remains, many of which are

similar to those of Anticosti. This limestone dips slightly to the *Mingan Islands* southward, so that the islands are bold, and frequently cliffy, on their north, east, and west sides, whilst they are low and shelving towards the south, in which direction the reefs of flat limestone and other dangers exist.

Ancient beaches, formed of water-worn pebbles of limestone, and flower-pot rocks, precisely similar to those which are forming at present out of cliffs that are washed by the waves, are met with in most of the islands, far above the reach of the highest tides.

The general character of these islands is low, they are estimated *Height* nowhere to attain an elevation exceeding 300 feet above the sea, and are in general much lower. They possess very little soil, but nevertheless are thickly wooded with spruce, birch, and poplar, *Trees* on the side towards the mainland; though towards the sea, barren tracts often occur, composed either of bare limestone, or of banks and ridges of limestone gravel.

Supplies of wood and water can readily be obtained from the *Wood and Water* principal islands; wild berries are abundant in their season, and so are different kinds of wild fowl. Quadrupeds are scarce, but there are plenty of seals upon the limestone reefs, and a few cod- *Seals and Cod* fish off the coast.

The coast of the mainland, from St. John River to Mingan, is of sand and clay, low and thickly wooded, and with a fine sandy beach. Further eastward the shore is sometimes of granite, and at others of limestone, the latter rock lying immediately over the former.

Mount St. John, 1416 feet high, and described in the last *Mount St. John* Chapter, is the highest point of the mainland in this neighbourhood. *on the main-land.* There are other hills, estimated at 1000 feet above the sea, about 6 leagues further eastward, but 6 or 7 miles back from the sea, and nearly opposite Quarry Island. With these exceptions, the main is low, and it is particularly so opposite the Eastern Islands, where the hills are far back in the country.

The tides are not strong among these islands, never exceeding *Tides* a knot, excepting in very narrow channels. They are often rendered irregular by the winds, but in fine settled weather there is a constant alternation of the streams of flood and ebb between the islands and the main, and also within the distance of 2 or 3 miles from the outer, or southern shores of the islands.

For want of good charts of these islands, they have not been *These Islands not dangerous.*

Mingan Islands. much frequented by other than small coasting or fishing vessels, and the dangers of the navigation among them has been much exaggerated. With the exception of the rocks off St. Genevieve and Hunting Islands, which are very dangerous, and a shoal to the westward of Clear Water Point, there are no detached shoals outside the line joining the outer points of the islands, nor do the reefs of flat limestone extend further out from the high water than three-quarters of a mile in any part. The principal channels between the islands, and between them and the main, may be easily navigated with the assistance of our charts, and there are several excellent harbours capable of admitting the largest vessels.

*Number of
these Islands.*

There are 29 of these islands, in none of which are there any inhabitants; some of them are very small, and the largest does not exceed 11 or 12 miles in circumference. They are arranged parallel to the coast, and extend along it 45 miles from St. Genevieve Island, at the eastern end, to the Perroquets at the western end of the chain.

Clear Water Point, which is 14 miles to the westward of St. Genevieve, projects out so as to interrupt the continuation of the chain of islands, and thus separates them into two divisions, the easternmost of which has been called the Esquimaux Islands, a name which should be confined to the island properly so called in the western division. I shall consider them all as the Mingan Islands, and treat first of the eastern division.

*St. Genevieve
Island.*

67. ST. GENEVIEVE, the easternmost of the Mingan Islands, is about 5 miles in circumference. Its N.E. point is a bluff headland, being the termination in that direction of the highest part of the island, which is about 200 feet above the sea, and slopes irregularly down to the southward.

*Mount St.
Genevieve.*

MOUNT ST. GENEVIEVE is an isolated table hill on the mainland, of limestone, 332 feet above the sea at high water, resting on the granite about a mile inland, and bearing N. $\frac{1}{2}$ E., rather more than 2 miles from the N.E. point of the island of St. Genevieve. This mountain, and the high N.E. point of the island, distinctly point out to a vessel at sea the position of the channel between the island and the main.

*Dangers off St.
Genevieve
Island.*

There are two patches of rock which render it necessary to approach the island of St. Genevieve with caution, viz., the Saints, and the Bowen Rocks.

The Saints.

THE SAINTS are two low and bare rocks, lying rather more than

half a mile to the south of St. Genevieve. There is a channel of 5 fathoms deep, but with foul ground, between them and the island; and reefs under water extend from each of them fully 300 fathoms to the south, S.E., and S.W.

The N.W. BOWEN ROCK, with 3 feet least water, lies $1\frac{1}{2}$ miles N.W. Bowen E.S.E. $\frac{1}{2}$ E. from the eastern Saint, and with the south side of the Rock. latter on with the centre of the western Saint.

The S.E. BOWEN ROCK, with 6 feet least water, lies two-thirds S.E. Bowen of a mile S.E. $\frac{1}{2}$ S. from the north-west Bowen Rock, and S.E. by E. $\frac{1}{2}$ E., $1\frac{1}{2}$ miles, from the eastern Saint, which is just open to the northward of the western Saint. These very dangerous rocks lie nearly in a line from the S.E. point of St. Genevieve, at the distance of $1\frac{1}{2}$ and 2 miles, respectively. There is very deep water between and close to them, and also for rather more than a mile to the southward of them and the Saints. The soundings are here *Irregular Soundings*. extremely irregular, varying from 4 and 6 fathoms rock, to 43 fathoms sand, sometimes in a single cast of the lead. The whole of this dangerous part should be avoided by vessels.

HUNTING ISLAND, the next westward of St. Genevieve, is low, *Hunting Island*. thickly wooded, broken into many coves, fringed with small islets and rocks on all sides, excepting towards the mainland, and is about 11 miles in circumference. Its longest diameter is parallel to the coast, and about 4 miles. Off its S.W. point, and extend- *Dangers off it*. ing to the distance of $1\frac{1}{2}$ miles, lie Wood and Gun Islands, leaving *Wood and Gun Islands*. no passage between, and having reefs running out from them 300 fathoms to the southward. They are both low, and the latter is bare of trees, but covered with grass and peat, in which innumerable puffins burrow and rear their young.

The GARDE ROCK, always above water, lies rather more than a *Garde Rock*. mile off to the southward, from near the centre of Hunting Island; it would be highly imprudent for any ship to attempt a passage between it and the island, as there are many ledges scattered along the southern side of the island, and the Garde is itself the termination of a long ridge of sunken rocks. The south-eastern end of the island is likewise beset with several reefs, some of which extend three-quarters of a mile to the southward.

COLLINS SHOAL, a small patch of rocks, with 15 feet least *Collins Shoal*. water, lies $2\frac{1}{2}$ miles south, from the S.E. point of Hunting Island. The marks on this dangerous shoal are the east point of St. Genevieve just open to the eastward of the western Saint, bearing

GULF OF ST. LAWRENCE.

N. 38° E., and the north point of Wood Island on with the south side of the Garde Rock, bearing N.W.

Irregular Soundings.

Between Collins Shoal and the reefs off the S.E. point of Hunting Island, the soundings are irregular, from 4 to 17 fathoms over rocky bottom, and vessels should not pass there, as in such a place it was impossible to be sure of having discovered every point of rock which may approach a few feet nearer the surface than the rest.

ST. GENEVIEVE AND BETCHEWUN HARBOURS.

St. Genevieve Harbour.

The first of these harbours is situated between the island of the same name and the mainland, and the second, between Hunting Island and the main. Both are excellent harbours, not difficult of access or egress with the assistance of a good chart, and fit for the largest ships.

There are two channels leading to these harbours; namely, the East, and the Saints channels.

East Channel.

To enter by the East channel, with an easterly wind, observe the following directions:—

Being at a distance from St. Genevieve Island, of not less than 3 miles, to be sure that you are further out than Bowen Rocks, bring the N.E. point of St. Genevieve in one with Indian Point, (a low wooded point of the main, forming the east point of Pillage Bay,) bearing N. 35° W. Run in with this mark on, and you will leave the Bowen Rocks half a mile to the westward, and will pass them in between 20 and 30 fathoms, over a bottom of fine sand and coral.

When the S.E. point of St. Genevieve and the west Saint come in one, change your course a little to the northward, so as not to go too near a flat shoal, which extends nearly 300 fathoms from the east side of St. Genevieve.

Give the N.E. point of St. Genevieve a berth of a cable's length, and passing as close to the shingly north point of that island as you please, bring up in 10 fathoms, mud bottom, half way between the latter and Anchor Island, which will be seen lying close within the N.W. point of St. Genevieve.

Betchewun Harbour.

If you wish to proceed to Betchewun Harbour instead of anchoring at St. Genevieve, pass to the northward of Anchor Island, which is quite bold on that side, and you will see the en-

trance of Betchewun (between the north point of Hunting Island *St. Genevieve* and Partridge Point) bearing W. by N.; Mount Partridge, on the N.E. side of the point of the same name, will be easily recognised, being a wooded and steep-sided hill, similar to, but much lower and smaller than Mount St. Genevieve. The north point of Hunting Island is also a cliffy mound, with a cove on the east side of it. It is quite bold, and you must pass close to it, to avoid the shoal off Partridge Point, which extends a full quarter of a mile to the southward, and diminishes the navigable breadth of the entrance to 350 fathoms. When in the entrance, you will see a low islet in the centre of the harbour; steer for it, and anchor with it bearing W. by N., and distant one-third of a mile. The depth of water in the harbour is from 9 to 18 fathoms, over mud bottom.

The distance across from the N.E. point of St. Genevieve to the *Ledge Point*. main is about a mile, but the navigable breadth of the entrance is reduced to half mile, by the rocks and shoal water off Ledge Point, which is composed of numerous rocks of granite close together.

The shoal water extends from Ledge Point, directly across Pillage Bay, to Partridge Point, and you must not approach these shoals nearer than 7 fathoms.

This East channel is the best with easterly winds, and may be used with moderate westerly winds during the flood tide, by vessels not too large to work in such narrow channels, but they must be careful in their boards to the northward, especially in that towards Ledge Point.

To enter these harbours by the Saints Channel observe the *Saints Channel*. following directions:—

Bring the west points of St. Genevieve and Anchor Island in one, bearing north, at a distance of not less than 5 miles from the former, to be sure that you are outside of Collins Shoal. Run in upon this leading mark, until the north sides of the two Saints come in one, bearing E.S.E. $\frac{1}{2}$ E. The east sides of Mount Partridge and of Hunting Island (or rather of an island joined to it at low water) will come in one at the same time, bearing N.W. by N.; steer upon this last-named leading mark, (to avoid a reef which extends 280 fathoms from the S.W. point of St. Genevieve,) until the east side of Mount St. Genevieve, seen over the sandy S.E. point of Anchor Island, comes in one with

*St. Genevieve
and Betchewun
Harbours.*

the N.W. point of St. Genevieve Island, bearing N.N.E. $\frac{1}{2}$ E. Change your course now to north, which will take you in through the centre of the channel between St. Genevieve and Hunting Islands, and you may either proceed to St. Genevieve Harbour, round Anchor Island, giving its west end a berth of two cables' length, or to Betchewun Harbour along the N.E. side of Hunting Island, which is quite bold.

The directions just given for the Saints Channel will lead a ship in between the dangers off St. Genevieve and Hunting Islands, in not less than 20 fathoms water, and she will not have a less depth until she is in as far as Anchor Island. The breadth of the channel between the shoal water off the Saints, and the shoals off the S.E. point of Hunting Island, is a mile. It diminishes to half a mile between the reef off the S.W. point of St. Genevieve and the east end of Hunting Island, which is the narrowest part of the channel. Within this narrowest part, the ground becomes good for anchoring, as it is everywhere between St. Genevieve and Betchewun Harbours. Indeed so little sea comes in, that the whole space may be considered as a harbour capable of holding a great number of vessels of the largest class.

*Wood and
Water.*

Wood and water may be obtained, the latter from small streams, either on the main or on the islands.

*Betchewun In-
ner Harbour.*

There is an inner harbour at Betchewun, to the westward of the low islet which has been mentioned, but from thence there is no channel, excepting for boats, to pass out to the westward between Hunting Island and the main.

Tides.

The tides between St. Genevieve and Hunting Islands, and the mainland, are much influenced by the winds; but their rates seldom amount to a knot at any time, and are usually much less, excepting through the shallow and narrow channel at the west end of Betchewun Harbour, where there is at times a complete rapid.

Charles Island.

68. CHARLES ISLAND, the next westward of Hunting Island, is 3 miles long, parallel to the coast, and $1\frac{1}{4}$ wide. It is about 200 feet high, bold, and free from shoals; but at the distance of three-quarters of a mile south from its east point there is a patch of rocky ground on which no less than 5 fathoms has been found, but which had better be avoided by large vessels.

The east point of Charles bears N.W. by W., nearly $2\frac{1}{4}$ miles from the west point of Gun Island. The former of these points is quite bold, and so is the latter to the N.W.; but to the

S.W. it has a reef extending 200 fathoms. Between them is the entrance to Puffin Bay, which is open to southerly winds. Within *Puffin Bay*, the east point of Charles and half way towards a shoal cove in this island, there is good anchorage in 7 fathoms, mud bottom, at the distance of two cables from the island; but the S.E. winds send in a considerable swell. In the N.E. corner of this bay is the narrow entrance (between shoals off Ragg Point and Hunting Island) to Ragg Bay, which has tolerable anchorage in its N.W. *Ragg Bay*, part, but has very deep water on the side towards Hunting Island, and is separated from the western part of Betchewun Harbour by the shoal and narrow channel for boats between the island and the main, mentioned in the last page.

CHARLES HARBOUR, between the island and the main, though *Charles Harbour*, very narrow, is perfectly secure, and deep enough for vessels of any size, but its entrances are only 80 fathoms wide. Within, the harbour expands to a quarter of a mile wide by three-quarters of a mile, in length parallel to the shore. Both entrances are 7 fathoms deep, but you must pass over 4 fathoms if you enter from the eastward through Puffin Bay. The depth within the harbour is from 4 to 6½ fathoms, with mud bottom.

Strong winds occasionally cause the tides to run at the rate of 2 *Tides*. knots in the entrances of the harbour, but in general there is only a weak stream with either tide.

To enter this harbour from Puffin Bay, bring the N.E. point of *Eastern Entrance*, Charles, which is high and cliffy, to bear N.W., then steer for it, and give it a berth of between 100 and 180 fathoms, as you haul round it to the westward into the harbour.

To enter from Trilobite Bay, give the N.W. point of Charles *Western Entrance*, Island a berth of between 60 and 140 fathoms, as you haul round it to S.E. by E. into the harbour. All the way from the eastern narrow entrance into Charles Harbour there is a broad zone of shoal water, which curves round parallel to the mainland till it joins Whale Island, and nearly fills up all the N.W. part of Trilobite Bay.

WHALE ISLAND, lying one quarter of a mile from the east *Whale Island*, side of Ammonite Point, and with shoal water between them, is distant 800 fathoms to the westward of Charles Island. Both islands are bold and cliffy, and Trilobite Bay is between *Trilobite Bay*, them with excellent anchorage, well sheltered from all but southerly

winds. The only danger to be avoided when working into Trilobite Bay is a reef off Ammonite Point, which includes a small islet, and extends half a mile off-shore. The mark to clear this reef, when running along the coast, is to keep Gun Island open to the southward of Charles Island, and when hauling in from the westward, into Trilobite Bay, keep the north point of Charles well open to the southward of Whale Island.

Clear Water Point.

CLEAR WATER POINT, about 2 miles westward of Ammonite Point, and $2\frac{1}{2}$ miles westward of Whale Island, is low, and the shoal water does not extend more than a quarter of a mile off it to the southward.

69. The coast forms a large bay between Points Clear Water and Esquimaux, along which there are high and conspicuous cliffs of sand and clay, that distinguish this part of the coast to a vessel at sea. The shoal water extends a considerable distance from the shore all round this bay, and opposite Sea Cow Island the 3 fathom mark is a mile out from the sandy beach.

Clear Water Shoals.

Due west, and $1\frac{1}{2}$ miles from Clear Water Point, lies a rocky 3 fathom shoal; and there are three others, with 2 fathoms, lying to the northward of the first, and in a line from the point, towards Walrus Island: the outer and westernmost of them being rather more than 2 miles from the Point.

The mark for the outermost of these shoals is the south side of the high land of Niapisca Island in one with the south point of Gull Island, bearing N.W. by W. $\frac{1}{2}$ W.; or the north point of Fright Island, on with the south side of Esquimaux Island, and open to the southward of Green Island, bearing N.W. by W.

The leading mark for passing outside these shoals, at the distance of half a mile, is the south points of Gull and Fright Islands in one, bearing N.W. by W.

Walrus Island.

WALRUS ISLAND lies 4 miles to the W.N.W. from Clear Water Point, and Sea Cow Island is close to the N.E. of it. The two islands together cover the space of $1\frac{1}{2}$ miles, in a N.E. direction, and are steep and precipitous, excepting to the southward, in which direction the reef off Sea Cow Island extends three-quarters of a mile, and that of Walrus Island, 200 fathoms.

Sea Cow Channel.

There is a clear channel to the eastward of these islands, and also between them and the Clear Water Shoals. This channel is $1\frac{1}{2}$ miles wide, and, although not the best may be used in pro-

ceeding to Esquimaux Harbour from the eastward, by running upon the leading mark, which has been given for clearing the shoals to the westward of Clear Water Point, until the east side of Esquimaux and Walrus Islands come in one. Then steer for the N.E. side of Sea Cow Island, and haul round it, at the distance of not less than 2 cables, to the north-westward for the east entrance of the harbour.

GREEN ISLAND, small, low, covered with grass, with reefs *Green Island.* stretching north and south, 270 fathoms, but bold to the east and west, lies $\frac{1}{4}$ of a mile W.N.W. from Walrus Island, and a third of a mile E.S.E. from Esquimaux Island.

GULL ISLAND lies a mile W. $\frac{1}{2}$ S. from Green Island, which it *Gull Island.* resembles, excepting that it is rather smaller. It is distant half a mile from the S.E. point of Esquimaux Island to the S.W., but there is no passage for ships between them. The south point of Gull Island is bold, and may safely be passed at the distance of 2 cables.

ESQUIMAUX ISLAND, $2\frac{3}{4}$ miles long, parallel to the coast, and $1\frac{1}{4}$ *Esquimaux Island.* miles wide, is 200 or 250 feet high towards its north side, sloping to the southward. From its S.W. point a shoal extends towards Fright Island, which also has a shoal stretching towards Esquimaux Island. The channel between these, leading north-eastward towards Esquimaux Harbour, (see art. 70,) is 380 fathoms wide, with extremely deep water, but as there are no leading marks for it, and the reefs on either side are extremely dangerous, it cannot be recommended.

FRIGHT ISLAND is nearly a mile from the west point of *Fright Island.* Esquimaux Island, and about two-thirds of a mile long, in a N.E. direction; it is bold on the south and S.W., on which sides vessels may pass at a cable's length, but reefs extend off it to the east, N.E., and N.W., to the distance of three cables.

QUIN ISLAND lies within, or N.E. by N. from Fright Island, *Quin Island.* from which it is distant a short half mile, it is nearly $1\frac{1}{4}$ miles long, in a N.N.E. direction, and its shores are bold, with the exception of a broad reef running out half a mile to the W.N.W. from its north point.

There is a channel, which is deep, but only two cables wide, *Fright Channel.* between Quin Island and the reefs off Fright Island. This channel may be used with a westerly wind for proceeding to Esquimaux Harbour, by hauling up to the east of Niapisca till the south

end of Quin Island comes in one with the south side of the cove in Esquimaux Island, bearing E.S.E., then steering so as to pass close round the south point of Quin Island, which is quite bold, and thence E. by N., 2 miles, to the harbour.

Quin Channel.

But the best channel from the westward towards Esquimaux Harbour is between Quin Island and the main, which, at Point aux Morts, is distant two-thirds of a mile to the N.N.E. from the north point of the island. The shoal water extends only a cable's length to the northward from the latter, but off Point aux Morts, and also off the small islets which lie rather more than a third of a mile to the W.N.W. from it, the reefs extend 200 fathoms to the southward, and the shoal water is continuous to the eastward, across the mouth of the wide bay, which is to the northward of the harbour, and between Point aux Morts and Esquimaux Point. The depth of water in Quin Channel is from 5 to $7\frac{1}{2}$ fathoms, with rocky, gravelly, or sandy bottom.

Esquimaux Harbour.

70. ESQUIMAUX HARBOUR lies between the north and N.E. points of the island of the same name, and between that island and the mainland. The island is 400 fathoms from Esquimaux Point, which bounds the N.E. part of the harbour. Esquimaux Point, having the entrance of a small river on its west side, consists of sand, and is quite bold to the S.W., although shoals extend from it across the bays on either side, as has been mentioned. The north and N.E. points of Esquimaux Island are also bold, and may be passed at the distance of 70 fathoms by the largest ships. The depth within the harbour is from 5 to 15 fathoms, over a sandy bottom. The space in which vessels may anchor is nearly $1\frac{1}{2}$ miles long, in a N.W. $\frac{1}{2}$ W. direction, which is the bearing of the points of the island from each other, and the average breadth of the harbour four cables' length. There is therefore room for a great number of vessels, which, if they anchor well over towards the island, (that is, within the line joining its north and N.E. points, and in not more than 11 fathoms water,) will be sheltered from all winds. Supplies of good water may be procured from the river at Point Esquimaux, or from small streams on the island, and wood is plentiful.

Water.

Brief directions have been already given for Sea Cow, Fright, and Quin channels, leading to this excellent harbour. I shall now describe the best channels from the eastward and westward.

Walrus Channel.

The best channel with easterly winds is between Walrus and

Green Islands. This channel is three-quarters of a mile wide, *Esquimaux Harbour.* with 8 fathoms least water, and it is only necessary to give either island a berth of 200 fathoms to be clear of all dangers. Being 2 or 3 miles outside of these islands, bring the N.E. point of Esquimaux Island to appear about half way between the two islands above mentioned as forming the channel, and it will bear about north. Steer for it, and giving it a berth of a cable's length, haul round it to the north-westward into the harbour, and anchor in the depth and position which has been recommended.

The best channel with westerly winds is to the westward of *Niapisca Channel.* Fright and Quin Islands, between them and Niapisca Island, in the first instance, and afterwards between Quin Island and the main. The extent and position of the reefs off Fright and Quin Islands have been already mentioned. Niapisca Island, however, has reefs of flat limestone extending half a mile to the southward; and also a quarter of a mile to the eastward, from its S.E. and east points, between which a very remarkable group of flower-pot rocks will be seen standing on the limestone just above high-water mark. From its east point, which is the south point of a bay in the island, another reef runs out half a mile to the N.E. by E., but there is ample space between these reefs and Fright Island, the channel being over a mile wide in the narrowest part, and between 30 and 40 fathoms deep.

In running for this channel from the westward observe the following directions.

First, observe that the leading mark for clearing the south reef of Niapisca Island by more than two cables' lengths, is the N.W. point of Fright Island in one with the south end of Quin Island: do not therefore open those islands clear of each other, until you have brought Moniac Island (bearing N. $\frac{1}{4}$ E., $2\frac{1}{2}$ miles from the nearest point of Niapisca) in sight to the eastward of Niapisca. Having done so, haul in through the channel, steering N.N.E. $\frac{1}{2}$ E., and when you open Moutange Island (next westward of Moniac) to the northward of Niapisca, you will be clear of the N.E. by E. reef above mentioned. Haul up now, if necessary, to clear the reef, which projects half a mile W.N.W. from the north point of Quin Island, until you not only open the north point of Esquimaux Island to the northward of Quin Island, but also the north point of Sea Cow Island to the northward of Esquimaux Island. Run in between Quin Island and the main, with the last-

*Esquimaux
Harbour.*

named marks just open, bearing about S. 54° E., and they will lead you past the north point of Quin Island, at the distance of about 200 fathoms.

*Point aux
Morts.*

Take notice that the mark for the shoals off Point aux Morts, and the small islets westward of it, is the north and N.E. points of Esquimaux Island in one, bearing S.E. $\frac{1}{2}$ E.; if you open them before you are as far to the eastward as Quin Island you will be ashore.

Having passed Quin Island, continue your course towards the north point of Esquimaux Island; and haul round it to the south-eastward into the harbour.

Tides.

The tides usually run at the rate of about one knot through Esquimaux Harbour, the flood coming round Clear Water Point from the eastward, and passing to the westward between Quin Island and the main. The ebb flows in the contrary direction.

The flood also draws in between Fright and Niapisca Islands, and the ebb sets out through the same channel. But these streams are much influenced, both in their rate and duration, by the winds, and the ebb is much accelerated by westerly winds in Esquimaux Harbour, running there at times fully 2 knots.

*Niapisca
Island.*

71. NIAPISCA ISLAND, the reefs of which have been already mentioned, is rather more than 2 miles long, on a north and south line of bearing; it is only partially wooded, and has three principal hills, not exceeding 200 feet high.

Quarry Island.

QUARRY ISLAND, nearly $2\frac{1}{2}$ miles long, parallel to the coast, and about the same height as Niapisca, is separated from the latter by a channel 370 fathoms wide, with a small islet in it, but no safe passage for shipping, because of a shoal in the bay to the southward, and of a reef which stretches beyond the small islet. Other reefs also run out one-third of a mile from the west side of Niapisca, and from the south side of Quarry Island.

Quarry Cove.

QUARRY COVE is on the north side, and two-thirds of a mile to the north-westward of the east end of the island. It is 230 fathoms wide, and about 400 deep, with 22 fathoms of water in the entrance, shoaling gradually to 5 fathoms with mud bottom close to its head. The islands and shoals along the mainland are distant only 3 miles to the northward of this cove, which thus becomes a completely land-locked, though very small, harbour. No other directions are requisite, than keeping the west side nearest on board in entering, and to anchor near the centre

in 9 or 10 fathoms. Good water may be obtained from a small stream in the S.W. corner of the cove.

There is a clear channel between Quarry Island and Large Island, which is the next westward. This channel is 400 fathoms wide from island to island, in the narrowest part, where the shoal water off Large Island diminishes the navigable breadth to 330 fathoms. The only directions necessary are to bring the channel to bear N.N.E., and then run in, keeping in its centre until two-thirds of a mile within the S.W. point of Quarry Island, after which you may keep that island close on board, as the remainder of the channel, $1\frac{1}{2}$ miles, is quite bold on that side, while the shoal water extends 150 fathoms from Large Island. The flood runs slowly in through this channel, and the ebb as slowly out. *Quarry Channel. Tides.*

LARGE ISLAND, of an oval shape, the longest diameter 4 miles, and lying nearly north and south, is rather more than 11 miles in circumference, thickly wooded, and in its highest part estimated at 200 feet above the sea. Reefs of flat limestone extend off its south and S.W. points to the distance of nearly three-quarters of a mile, and the mark for the south point of these reefs, in 2 fathoms, is the south points of Niapisca and Fright Islands in one. On its west side, a mile to the northward of its S.W. point, there are many flower-pot and arched rocks, standing on the flat limestone above the present high water mark. *Large Island.*

The MIDDLE REEF lies just within the line joining the south points of Large and Mingan Islands, and 2 miles westward of the former. A part of this reef is always above water, but it is not 30 fathoms in diameter, though the shoal around it is half a mile long in a N.E. by N. direction, and one-third of a mile wide. The mark for the east side of this reef, in 4 fathoms, is the east sides of the two Birch Islands in one.

The navigable passage between this reef and Large Island is called Large Channel, and is $1\frac{3}{4}$ miles wide, with a depth of 54 fathoms. This is the channel that should be used by a vessel proceeding to Mingan Harbour with an easterly wind, and in doing so the only thing necessary to be observed is, that the reefs extend to the westward off the shore of Large Island, from 3 to 2 cables' lengths, as far in as the Flower-pot Columns, after which the island becomes bold. There is little or no warning by the lead on the Large Island side, but the Middle Reef may be approached to 13 fathoms, which, on the east side, is more than half a mile from it. *Large Channel.*

Further in, the Birch Islands form the west side of this channel, at the distance of nearly 2 miles from Large Island; the east side of the Outer Birch is quite bold, and the shoal water extends only 150 fathoms off the east end of the Inner Birch Island.

Middle Reef Channel.

The OUTER and INNER BIRCH ISLANDS lie to the northward of the Middle Reef, and in a line from it towards the west side of Harbour Island. The channel between the Outer Birch Island and the Middle Reef, is almost a mile wide, and 30 fathoms deep, and the shoal water extends only 150 fathoms from the south point of the former. But there is a very dangerous reef off the west side of the Outer Birch Island, extending 650 fathoms from the shore. The channel between the two Birch Islands is 300 fathoms wide, but the ground is all foul, and not more than $3\frac{1}{2}$ fathoms could be carried through by a stranger. The Outer Birch Island is about a mile in diameter, and about 300 feet in height, and it has a remarkable flower-pot rock on its S.W. point. The Inner Birch Island is rather larger; its N.W. point is long and low, extending half a mile to the westward from the body of the island, with a curve to the S.W.; off this point there is a reef running out half a mile to the westward, and having 12 fathoms within a cable's length of its edge.

Birch Islands.

Hulk Rock.

Half a mile to the S.W. of the same point, there is a small low islet, close to the south point of which stands a very remarkable rock, called the Hulk Rock, from its resemblance to the hulk of a wrecked vessel. The reef, of flat limestone, dry at low water, which connects this islet and rock to the low west point of the Inner Birch Island, extends 300 fathoms off the rock to the S.W., and also 200 fathoms to the westward.

Tides.

The flood tide sets out to the S.W. between the Birch Islands, and also between them and the Middle Reef.

Birch Channel.

Birch Channel, between the Birch Islands and Mingan Island, is the best by which to proceed to Mingan Harbour with westerly winds. It is 3 miles wide, and all deep water.

Mingan Island.

Mingan Island, $3\frac{1}{4}$ miles to the westward of the Inner Birch Island, is nearly 2 miles long, in a N.N.E. direction: and, including two small islets close to its west side, nearly a mile broad. It is about 100 feet in height, and bare of trees. The shoal water does not extend above 300 fathoms off its south point, but to the S.W. and west the reefs, including the islets, run out nearly 600 fathoms. The island is bold on its north and east sides.

Mingan Patch lies S.W. $\frac{1}{2}$ S., $3\frac{1}{2}$ miles from the south point of *Mingan Patch*. Mingan Island, and with the south point of the Outer Birch on with the north point of Large Island; it is a patch of rocky ground, with 9 fathoms on it least water, yet there is a very heavy swell on it at times. There are 22 fathoms of water between it and the island.

The Perroquets, the westernmost of the Mingan Islands, are four *Perroquets*. small islets, low, and bare of trees. The north-westernmost is higher than the others, surrounded with cliffs, and has a superstratum of peat on its flat summit, in which great numbers of puffins burrow and rear their young.

The two easternmost of these islets are distant 2 miles N.W. by W. from the centre of Mingan Island, and have a reef of flat limestone extending off them three-quarters of a mile to the S.S.W. There is also a shoal to the northward of them one-third of a mile, and a narrow channel between them and the other two, but of no use to vessels. The north-westernmost islet has shoal water off it to the distance of a quarter of a mile, both to the eastward and westward, but a vessel may pass to the northward of it, at the distance of 200 fathoms, in 14 or 15 fathoms of water. Perroquet Channel, *Perroquet Channel*, between these islets and Mingan Island, is $1\frac{1}{2}$ miles wide, and with a depth varying from 30 to 40 fathoms in the centre. Both the flood and ebb set out through the channel, the former to the *Tides*. S.W., and the latter to the southward.

72. All the islands described in the last article are bold, and *Mingan Channel*, free from danger on their north sides, so that Mingan Channel, which lies between them and the main, is safe throughout.

On the mainland side of this channel, MONIAC ISLAND is less *Moniac and Moutange Islands*. than half a mile in diameter, and stands nearly opposite Niapiaca Island, from which it is distant about $2\frac{1}{2}$ miles. MOUTANGE ISLAND, $1\frac{1}{2}$ miles further westward, is about $1\frac{1}{2}$ miles in diameter, and situated off a bay full of little islets, and in which there are several small rivers. Moutange is directly opposite Quarry Island, at the distance of $2\frac{1}{2}$ miles. These islands, Moniac and Moutange, are distant three-quarters of a mile from the nearest point of the main, but shoals within and between them are nearly dry at low water.

The shoals do not project above three cables' length off to the southward of these islands, but there is rocky ground, with irregular soundings between 4 and 10 fathoms, out to the distance of a mile

*Mingan
Channel.*

to the southward of them both; so that a vessel beating in the Mingan Channel had better not stand over to the northward beyond $1\frac{1}{2}$ miles from the northern shores of the outer islands, or into less than 10 fathoms.

*Sand Lark
Reef.*

SAND LARK REEF, $3\frac{1}{2}$ miles N.W. by W. of Moutange Island, $2\frac{1}{2}$ miles E.S.E. from Harbour Island Mingan, and rather more than a mile from the mainland, is small and low, but always above water. The shoal water does not extend off it above a cable's length, and there is a clear channel with deep water on all sides of it; but there is a rocky patch, with 5 fathoms of water, $1\frac{1}{2}$ miles from it, on a line towards the south side of Moutange Island. This shoal water has not been particularly examined, and should therefore be avoided.

*Mingan
Channel
abreast Birch
Island,*

Between the Inner Birch Island and Harbour Island, the Mingan Channel is $1\frac{3}{4}$ miles wide, with rocky and irregular soundings, between 7 and 20 fathoms. The deepest water is over towards the Birch Island, where the bottom is generally of sand, gravel, and shells.

*abreast the
Perroquets.*

Between the Perroquets and Long Point, and also between Mingan Island and the latter, the Mingan Channel is $2\frac{1}{2}$ miles wide, and free from all danger, excepting a sandy shoal which extends off the shore, immediately to the westward of Long Point, to within a mile of the Perroquets. There is often a great ripple off this shoal, caused by the flood tide being turned off by Long Point towards the S.W. This channel may be conveniently used, in going to Mingan Harbour with a northerly wind.

Long Point.

Long Point consists of sand, and there is a fine beach from thence to the eastward, as far as Mingan Harbour inclusive.

*Mingan
Harbour.*

MINGAN HARBOUR is the narrow and well-sheltered space between Harbour Island and the mainland, which last is low and has a fine sandy beach, while the island is of limestone, about 100 feet in height, precipitous and bold towards the harbour, but shelving and shoal to the southward to the distance of a quarter of a mile from the shore. The length of the island is 2 miles, its greatest breadth does not amount to half a mile, and it is thickly wooded.

The reefs off the east and west ends of the island, and which are the principal things to guard against in entering the harbour, extend 240 fathoms out from the high-water mark.

The mainland recedes from the island in the eastern part of the

harbour, which would, in consequence, be exposed to easterly winds, if it were not for a sandy shoal, dry at low water, which extends 700 fathoms out from the entrance of the Mingan River. This river is only capable of admitting boats at high water, and its mouth is opposite the east end of the island. The eastern entrance of the harbour, between the above sandy shoal and the island, is 200 fathoms wide, the western entrance between the mainland and the island is 170 fathoms wide, the whole breadth in both entrances being in deep water. The space within, in which vessels may anchor in safety, is about a mile long by 270 fathoms wide, with plenty of water for the largest ships, over a bottom of fine sand.

Although these entrances are so narrow, there is little difficulty in taking a vessel in of the size of a sloop of war, and large frigates have occasionally visited the harbour.

To enter Mingan Harbour observe the following directions.

Directions for entering.

In approaching it from the eastward, bring the north or inner side of Harbour Island to bear N.W., and the houses of the Hudson Bay Company's post ought then to appear open fully their own breadth to the northward of the island. Steer for those houses so open, leaving the east end of the island 150 fathoms to the southward, or on your left, and taking care to keep the south side of the sandy point of the main, which forms the western entrance of the harbour, shut in behind the north side of the island, for when they are in one, you will be on shore on the sandy shoal off Mingan River. After you have passed the east end of the island, run along its north side at the distance of a cable, and choose your berth any where near the centre of the harbour, in from 9 to 13 fathoms sand bottom.

When running for the harbour from the westward; run in towards the sandy beach of the mainland at the distance of three-quarters of a mile to the westward of the island, until the sandy point of the mainland, which forms the west end of the harbour, comes in one with the face of the clay cliffs, to the eastward of the Hudson Bay Company's houses, bearing E. by S., or until you are in 11 fathoms water. Run upon this mark, or course, along the beach, and give the above sandy point of the mainland a berth of half a cable, as you pass into the harbour, and choose your berth as before directed.

Mingan Harbour is perfectly secure in all winds, and, like

Mingan Harbour.

Esquimaux Harbour, it has this great advantage, that vessels can enter or leave it either with easterly or westerly winds.

Outer Banks. The Banks of Soundings which extend off the Mingan Islands towards Anticosti have been already mentioned (art. 22), and it is only necessary to add here, that their southern edge, in 50 fathoms, is no less than 5 miles off from the islands, and that the banks become wider, or extend further off, as we proceed to the westward. There is much greater depth of water in some of the channels between the islands, than there is on these banks, as will be seen by the chart.

Long Point to St. John River. From Long Point, a broad beach of fine sand reaches to the River St. John, which was described in the preceding Chapter; and the chart will show that an irregular band of shoal water lies outside of this beach, at the distance of three-quarters of a mile.

Anchorage W. of Goodbout Bar. Note A.—The anchorage to the westward of the Bar, may occasionally be useful in easterly winds to small vessels. They should anchor about midway between the Bar and the first rocky Point to the westward of it, or about a mile to the westward of the Bar. To run for this anchorage, observe that the rocky point just mentioned and the east point of entrance of St. Nicolas Harbour in one, bearing W.N.W., just clear the bar; therefore keep the last, named point in sight, until the houses of Goodbout bear N.E., and then the bar will have been passed. After which, run in and bring the points in one, running for them till you judge yourself in the position above-mentioned, or till the east extreme of the high clay and wooded bank on the west side of the river, where it turns inland, and which can be seen over the sandy beach, bears N.E. by N. The houses of Goodbout will then bear E. $\frac{1}{2}$ N., Point St. Nicolas W. $\frac{1}{2}$ N., and the outer extreme of the bar E.S.E. The depth of water will be 6 or 7 fathoms at low water. Towards the shore there are $3\frac{1}{2}$ fathoms, at the distance of half a cable; then 3 fathoms for the distance of nearly 2 cables further in; and from thence shoal to the beach, distant about three-quarters of a mile from the vessel. To seaward the water deepens rapidly, so that there are 30 fathoms at the distance of about one-third of a mile: the bottom is rather coarse sand. This anchorage is only safe in summer. The tides at it are weak and irregular, rendering it difficult to keep an anchor clear in calm weather; they also frequently set towards the shore, coming with a long rippling, parallel to the coast.

Outard Bay. Note B.—The Gulnare took shelter from a strong westerly gale, in Outard Bay, in the autumn of 1839, and found the anchorage excellent. The tides were easy, the ebb not exceeding 2 knots, and the flood very weak; but their set was reversed in direction, in consequence of the effect of the Outard River. This anchorage, not generally known, might be useful to vessels bound up the St. Lawrence. Much misconception has heretofore existed as to the strength of the tides in this bay.

CHAPTER VIII.

THE COAST OF LABRADOR FROM THE STRAIT OF BELLE-ISLE TO
THE SOUTHMAKERS LEDGE AND CAPE WHITTLE.

73. General Remarks and Description of the Coast: its Climate, Productions, Inhabitants, Fisheries, &c.—74. Bradore Bay and Harbour.—75. Belles Amours, Middle Bay, Five Leagues Harbour, and Salmon Bay.—76. Esquimaux, Old Fort, and Dog Islands. Whale Island, &c. Bonne Esperance Harbour. Esquimaux Island, Bay, and River. Old Fort Channel, Island, and Bay. Dog Islands, Porpoise Rocks, Boulet Islet, and Peril Rock. Lobster, Rocky, and Napetepee Bays. Shecatia, and Mistanoque Harbour. Shag Islet and Rock. Soundings off the Coast.—77. Lane's Survey between Mistanoque and Cape Mecattina. General Remarks, and nature of the Coast. Cumberland Harbour, and Shecatia Bay. Sandy Harbour. Port Augustine, Eagle Harbour. Little Fish Harbour, Ha-Ha Bay. Great Island of Mecattina and Island Harbour. Mecattina Harbour. Portage Bay. Cape Mecattina; Mecattina High Land, Islands and Rocks, and the Channels between them.—78. General Remarks respecting the Coast between Cape Mecattina and Cape Whittle. Little Mecattina Island, River, and Cove. Hare Harbour.—79. Aylmer Sound; Spray Reef; Doyle Islands, and Roadstead; Louisa Harbour. Harrington Islands. Black and Major Reefs. Netegamu River.—80. St. Mary Islands. Cliff Islands. Boat Islands. St. Mary Rocks. Tender Reef. Middle Islands. Watagheistic Island and Sound.—81. Etamamu River and trading post. Southmakers Ledge. Wapitagan Harbour.

GREENLY Island lies $1\frac{1}{2}$ miles S.S.W. from Grand Point, which is on the northern or Labrador side of the entrance of the Gulf of St. Lawrence through the Strait of Belle-isle. The coast, which will form the subject of this chapter, lies between that island and the Southmakers Ledge, near Cape Whittle.

From the south point of Greenly Island to the Southmakers Ledge, the course is S. 56° W. true, or nearly W. $\frac{1}{4}$ S. by compass: and the distance is 128 miles. This line, however, could not be safely run upon at night, or in foggy weather, because it would take a vessel too near the Murr Rocks and the Black Reef, and would pass just within the St. Mary Rocks. The safe course to be steered from Greenly Island, by a vessel bound up the St. Lawrence, would be W. by S., which would clear all danger up to the

Greenly Island.

From Greenly Island to Southmakers Ledge.

Safe Course.

*Soundings on
that Course.*

East Point of Anticosti, bearing from the South Point of Greenly Island, S. 52° 30' W. true, 218 miles. A vessel, so steering, would carry soundings out to 60 fathoms, at the distance of 15 miles from Greenly Island. She would then find a greater depth, or no soundings, until she had increased her distance to 57 miles from the island, when she would again strike ground in from 30 to 50 fathoms, and continue to find soundings from time to time, in various depths, and over mud, sand, and gravel bottom, until she had passed the Southmakers Ledge. These soundings are on detached banks, lying parallel to the coast, at the distance of several leagues. They are very irregular, and there is in general much deeper water between them and the shore; and also to the southward for a great distance, or until we approach the opposite coast of Newfoundland.

Current.

In navigating along this coast the current in through the Strait of Belle-isle (see Ar. 12) should be taken into consideration, and it should also be remembered, that in addition to the permanent dangers of the coast, wandering icebergs are frequently to be met with. There is a weak stream of flood from the eastward in shore, and among the islands: and an equally weak ebb stream in the contrary direction: but both are much influenced by the winds.

*Icebergs.**General De-
scription of
the Coast.*

This coast (between Greenly Island and Cape Whittle) is exceedingly dangerous at night or in fogs; and even in day-time and fine weather it requires the intimate knowledge of the position of every ledge possessed by the fisherman, or a good chart on a large scale, to navigate along it with safety. The mainland and islands are of granitic rocks; bare of trees excepting in the heads of bays, where small spruce and birch trees are met with occasionally. When not entirely bare, the mainland and islands are covered with moss or scrubby spruce bushes; and there are many ponds of dark bog water frequented by water-fowl, and flocks of the Labrador Curlew. The mainland is broken into inlets and bays; and fringed with islands, rocks, and ledges, which frequently rise abruptly to within a few feet of the surface from depths so great as to afford no warning by the lead. In some parts the islands and rocks are so numerous as to form a complete labyrinth, in which nothing but small egging schooners, or shallops, can find their way. But although the navigation is everywhere more or less intricate, yet there are several harbours fit for

large vessels, and which may be safely entered with the assistance of the Admiralty charts, and these directions.

In general the mainland does not exceed the height of 500 feet above the level of the sea, and is often very much lower, as are all the islands excepting Great and Little Mecattina. These two high islands, the High Land of Mecattina, 685 feet above the sea, and the Bradore Hills, are all very remarkable, and serve to point out to a vessel her position from great distances at sea. The Bradore Hills are three contiguous round backed mountains situated inland 4 or 5 miles north-eastward from the head of Bradore Bay. The N.W. summit is the highest, being 1264 feet above the sea, and the highest land on this coast.

The climate is very severe, and the dangers of the coast are increased ten-fold by the fogs which accompany the prevalent southerly winds. It is probable that the mean temperature of the year does not exceed the freezing point. The ice does not usually leave the coast before June: and young ice begins to form again in the pools and sheltered small bays in September, when frosts are very frequent at night. At midsummer we found only a very few of the earliest plants in flower, the grass had not sprung up, and the moss still retained the brown colour of winter. Large masses of snow still occupied the ravines and hollows and the shaded northern sides of steep hills.

In the sheltered bays the temperature is much higher, and the fogs less frequent than among the outer islands: whilst at the distance of 5 or 6 leagues inland, the weather is said to be quite warm in summer, and the country thickly wooded with spruce, juniper, birch, and poplar trees, which grow in valleys, where the soil is of sandy clay, only the summits of the hills being of bare granite like the coast. There are a very few Indians of the Montane's tribe, and a family or two of half-civilized Esquimaux occasionally visit the coast from the northward. There are deer (Caribou), bears, wolves, foxes, martens, otters, beavers, and Canadian porcupines in the interior; most of which are hunted for their skins by the few inhabitants of the coast. The Canadian partridge, and the ptarmigan, or willow grouse, are also plentiful.

The only permanent inhabitants are a few widely-scattered families, residing at seal and salmon fishing, and fur-trading establishments, which are visited periodically by small schooners from Quebec. Seals and salmon are very plentiful. The



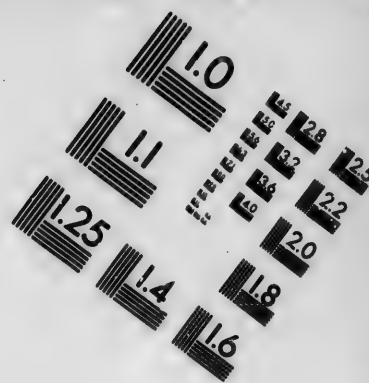
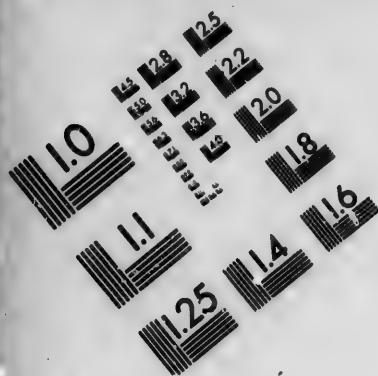
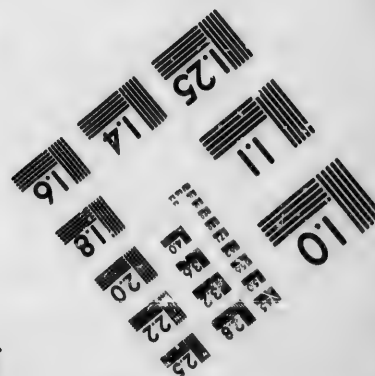
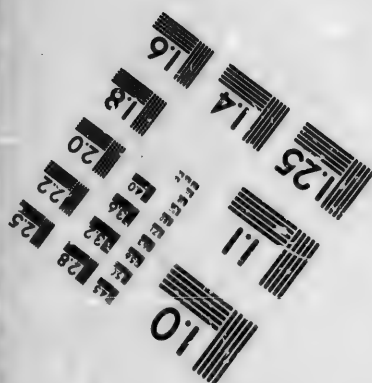
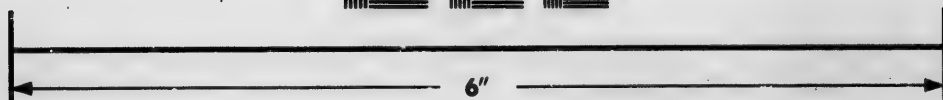
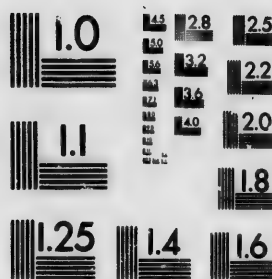


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Fur and Fishing Establishments.

establishments alluded to, are at Bradore, Esquimaux Bay, St. Augustin Harbour, Little Fish Harbour, and Etamamu. These are the only places which could be relied on for much assistance by the crews of vessels which might be wrecked upon the coast. There is a family residing on an island between Bonne Esperance and Salmon Bay in summer, and in Old Fort Bay in winter, which might be added to the list. The remaining two or three families are very poor people, who seem just able to make out an indifferent livelihood by hunting and fishing.

Cod Fishery.

Cod fish are abundant on the coast, especially to the eastward of Mistanogue. The fishery for them is not carried on by resident inhabitants, but by schooners which visit the coast every summer. Intelligent American fishermen informed me that the number of vessels employed in the fisheries off this coast is about 300 sail, of the average burthen of 75 tons. Their crews amount to 50 men for every 6 vessels, or 2500 men in all. Of these about one fourth only are British; about one half are American; and the remainder French vessels. Each vessel takes, one with another, about 1500 quintals of cod fish.

Egg Trade.

From 15 to 20 small schooners, or shallops, of about 25 tons, are employed in what is termed the "egging business." The eggs, which are most abundant and most prized, are those of the murr; but the eggs of puffins, gannets, gulls, eider ducks, cormorants, &c., are also collected. Halifax is the principal market for these eggs, but they are also carried to Boston, and other ports. One vessel of 25 tons is said to have cleared £200 currency by this egging business in a favourable season.

Desolate Coast.

Situated in a severe and gloomy climate, and producing nothing that can support human life, this is one of the most barren and desolate coasts in the world. There would be no inducement to visit it, if its fisheries did not excite the enterprise, and reward the industry of many hundreds of people. In many parts the scenery is not without beauty, but it is beauty of a wild and dreary character.

Bradore Bay.

74. The course and distance across the mouth of Bradore Bay, from Grand Point to Point Belles Amours is N.W. 9 miles, with soundings the whole way, in depths not exceeding 27 fathoms. In the N.E. part of Bradore Bay is the Island of Ledges, not high, of granite, surrounded by small islets, rocks, and ledges, as its name implies, and forming the harbour of Bradore. On the

Ledges Island.

N.W. side of the bay, just within Point Belles Amours, is Belles Amours Harbour. Between these harbours there are straggling rocks, and no anchorage, which together with the heavy sea, sent in by the southerly winds, make this bay a very dangerous place. Grand Point, the S.E. point of the bay, has a reef of rocks off it, *Grand Point and Reef.* 350 fathoms to the south and west. The end of the point is low, but immediately in rear of it there rises a precipice having a round knoll upon it, and behind that a still higher precipice, being the S.W. extremity of the extensive table lands of sandstone, extending eastward along the northern side of the Strait of Belle-isle, and northward to near the head of Bradore Bay.

N. by W. $\frac{1}{2}$ W. $1\frac{1}{2}$ miles (across Sandy Bay) from Grand *Peroquet Island.* Point, brings us to Peroquet Island, which is high, less than half a mile in diameter, of sandstone, and the abode of myriads of puffins; $1\frac{1}{2}$ miles further on the same line of bearing, will reach the southern ledges of the Island of Ledges, between which and the Peroquet is the channel leading to Bradore Harbour. There *Channel leading to Bradore Harbour.* is no channel between the Peroquet and the mainland to the eastward, from which it is distant rather more than $\frac{1}{4}$ of a mile. The houses and flag-staff at Mr. Jones's establishment are on the *Mr. Jones's Establishment.* mainland, about $1\frac{3}{4}$ miles N.N.E. from the west side of the Peroquet, and are opposite to the centre of the Island of Ledges. Several rocks above water will be seen close to the shore opposite the houses; and within them, on the mainland side, shoal water extends out from the shore to the distance of 200 fathoms in some parts; and continues quite to the head of the bay; leaving a channel 15 fathoms deep, and 240 fathoms wide, in the narrowest part, between it and the islets forming the western side of the channel. These islets lie in a chain, or straight line, parallel to the mainland, and close along the eastern side of the Island of Ledges: they are quite bold in every part. The S. westernmost, or outermost of these islets (*a*), which is rather in the way, but always shows, is very small, and has a rock off it, a cable's length to the southward. The next (*b*), 120 fathoms long, is directly opposite the houses on the mainland. The third (*c*) is $\frac{1}{2}$ of a mile long, and there is a very narrow channel, 2 fathoms deep, between it and the fourth islet (*d*) leading into Blubber Cove, *Blubber Cove.* (which is only fit for very small vessels,) and is on the east side of the Island of Ledges. The north-easternmost of the islets (*e*) is bold looking, and about 70 fathoms long. Between it and the

Bradore Harbour Entrance. islet (d) is the entrance to Bradore Harbour, 80 fathoms wide, and 7 fathoms deep. There are two more islets close together (f) $\frac{1}{4}$ of a mile N. by E. of islet (e). There are from 15 to 20 fathoms of water between (e) and (f), and also between the latter and the point of the Island of Ledges. Between the point last mentioned, and the islets (d) and (e), lies the harbour of Bradore, at the inner or N.E. end of the Island of Ledges. It is perfectly land-locked, and has a depth of from 4 to 17 fathoms water over muddy bottom; but it is capable of holding only a small number of vessels, the space in which they can anchor being about a $\frac{1}{4}$ of a mile long, by 150 fathoms wide. There is, however, plenty of room, and good anchorage for large vessels, farther up the bay to the N.E. of islets (e) and (f), in from 16 to 20 fathoms over muddy bottom; some sea rolls in there with S. W. winds, but not enough to endanger a vessel with good anchors and cables.

There is no channel for vessels into Bradore Harbour to the northward and westward of the Island of Ledges on account of the innumerable rocks, although it is possible for small craft to pass through a narrow and very deep channel close along the south side of the island. The only navigable channel therefore is that which I have described; and the principal dangers therein are the Gull Rock and Ledge, which bear S.W. by W., and are distant 280 and 490 fathoms respectively, from Point Jones on which the houses stand. The rock just covers at high water, and therefore can always be seen; but the ledge has 2 fathoms least water, and is therefore extremely dangerous. On the west side of this ledge, the western extremes of Peroquet and Greenly Islands are in one; and therefore the latter extreme, kept half a point open with the former, or S. $\frac{1}{2}$ W., will clear both the rock and ledge.

Gull Rock and Ledge.

Mark for Gull Ledge.

This full description will render very brief directions sufficient for entering the harbour, which should not be attempted by a stranger without a leading wind and fine weather.

Bradore Harbour.

In coming from the eastward give Grand Point a berth of a full half mile, or in hauling round it to the northward, take care that the west extreme of the Peroquet does not bear to the westward of north, for the reef is very dangerous, and there is no warning by the lead. The west side of the Peroquet may be passed as near as $\frac{1}{4}$ of a mile. Having passed it, haul to the eastward till the mark for clearing the Gull Rock and ledge, just mentioned, comes on. Then steer with that mark on, or

N. $\frac{1}{2}$ E. until you see the Gull Rock, or until Jones's house bears *Bradore Harbour*. E.N.E. and the islet (e), which will appear as the N.E. extreme of the Island of Ledges, N.E. by N. Steer now for the latter, leaving the Gull Rock to the eastward, and looking out for the other small rock on the opposite side, which has been mentioned as lying off islet (a). As soon as you have passed this rock, you will have a clear channel before you by keeping nearer the islets than the mainland. When opposite Jones's houses, bearing S.E. by E., you will also be opposite islet (b); a run of about 700 fathoms further along islets (c) and (d), which are quite bold, will take you to the entrance; and you must haul sharp round to the westward, between (d) and (e), into the harbour; unless you prefer the more roomy and deep water anchorage further up the bay; in which case there is nothing in your way, excepting the shoal extending off the main shore already mentioned.

In approaching Bradore from the westward, beware of the reefs *Approaching Bradore from the westward.* which extend $\frac{3}{4}$ of a mile to the S.W. from the Island of Ledges. In order to give these a wide berth, do not bring the Peroquet to bear to the southward of S.E. by E. until Jones's house bears N.E. by E.; then steer for the latter, until the marks come on for clearing the Gull Rock and Ledge, when you must proceed as before directed.

Water may be obtained at a small stream near the houses, and *Fresh water.* also from small rivers, in the head of the bay, at high water. A weak stream of flood sets into Bradore Bay from the southward. *Tides.* The ebb sets out in the contrary direction, and is at times accelerated by S.W. winds, but I never saw its rate amount to one knot.

75. The country separating Belles Amours, Middle Bay, and Five Leagues Harbour is very remarkable. Low granite, on which *Appearance of the Country.* are ridges of boulders, with coarse grass and moss, extends out to seaward several miles from the range of steep granite hills four or five hundred feet high, which trend westward from the head of Bradore Bay. This low country has a green and alluvial appearance from the sea; and it is not until we approach near to it, that we perceive that the shores are of rock and boulders.

Point Belles Amours will be easily recognized, being a mound *Point Belles Amours.* of bare granite, 60 or 70 feet high; at the S.E. extremity of the low peninsula, separating the harbour of the same name from Middle Bay.

*Stony Point
and Flat
Rocks.*

Stony Point, low and green, bears E N.E. $\frac{1}{2}$ E. $1\frac{1}{2}$ miles, and the Flat Rocks (which lie off it $1\frac{1}{2}$ miles to the S. by E.) E.S.E. $\frac{1}{2}$ E. rather more than $1\frac{1}{2}$ miles from Point Belles Amours.

Stony Point and the Flat Rocks form the east, and Point Belles Amours the west side of the channel leading to Belles Amours harbour.

Rocky Patch.

Nearly midway between Point Belles Amours and the Flat Rocks, there is a rocky patch with 13 feet least water. Between this patch and the Point there are other patches with $3\frac{1}{2}$ fathoms, which is as much water as can be counted on through the Western passage; but on the side towards the Flat Rocks (that is, through the eastern passage) there is from 6 to 17 fathoms of water, the soundings being extremely irregular and the ground foul.

Harbour Point.

Harbour Point, about $1\frac{1}{2}$ miles within Point Belles Amours, and on the west side, is a bare granite hill, about 150 feet high, with several beacons of stones upon it, which are erected upon almost every hill, and are said to be for the guidance of travellers in winter. The shore between these points is lined with large boulders, and incloses a large and shallow pond, the centre of which is within Pond Point, which is nearly opposite Stony Point. The shoal water extends off, on this side, 150 fathoms from the high water mark. The N.W. side of Harbour Point is of sand extending (together with a flat which dries at low water) partly across the inner entrance of the harbour. Between this flat and the high and bold rocky shore to the northward, the narrowest part of the entrance of the harbour is a cable's length wide, and 6 fathoms deep, with muddy bottom. North-eastward of Harbour Point, and at the distance of about 80 fathoms, there is a small rock always above water; 100 fathoms farther out in the same direction lies another small rock, which dries only at low water. There is no passage for vessels of any size between these rocks and Harbour Point. The entrance is to the westward round these rocks, and between them and the main land to the northward. The distance from Point Belles Amours to the entrance is about 2 miles. On the east side of the entrance the shoal water and large stones extend from Stony Point northward to the point of the North Cove, which is only fit for boats. That side must therefore be avoided.

*Flat.**Rock above
water.**Rock under
water.**Belles Amours
Harbour.*

Now to enter Belles Amours Harbour by the eastern passage, steer N. by W. $\frac{1}{2}$ W. so as to leave the Flat Rocks $\frac{1}{2}$ of a mile on

the starboard hand, or to the eastward, and you will see Harbour Point open to the westward of Stony Point right ahead. Continue this course (taking care not to approach the west side of Stony Point nearer than a long cable's length) until you approach the east side of Harbour Point as near as 100 fathoms. Then steer north till you open out the sandy part of the point, or are abreast of the rock above water off it, when you must haul a little to the westward, so as to bring the east side of Harbour Point and Pond Point in one. Keep them in one, in order to round the North extreme of the Flat, and you will have 4 fathoms until Mark Point (the extreme on the north side within the harbour) comes on with Peak Point (a remarkable rocky point in Middle Bay), seen over the low land at the head of the harbour, and bearing W. $\frac{1}{2}$ S. As soon as this mark comes on, haul sharp round to the westward, keeping at a less distance than a cable's length from the high north shore until you are well within the sandy spit, when you may haul to the southward, and anchor anywhere, the bottom being of mud and the depth from 5 to 7 fathoms.

To enter by the western passage, which is preferable with a westerly wind, approach Point Belles Amours on a bearing nothing to the eastward of E.N.E., and take care not to shut in Stony Point behind it, for fear of the Middle Ledges. Pass Point Belles Amours at the distance of 200 fathoms, and go no nearer the shore, on that side, until you are past Pond Point: then haul in gradually to within a cable's length of the east side of Harbour Point, when you should proceed as before directed. As soon as the marks come on for hauling into the harbour to the westward, you must put your helm down and shoot your vessel in as far as she will go; then let go your anchor, and warp in the remainder of the way. It is only with easterly and southerly winds that a vessel can sail in. The bottom is good for anchoring outside Harbour Point, but not outside Stony Point.

Belles Amours is a beautiful little harbour, in which a great number of vessels may lie perfectly land-locked; and might even winter there as securely as in a dock. Water may be had in the N.W. corner of the harbour, and also from a considerable stream at the head of the North Cove where there are a few trees; but wood for fuel is very scarce on this coast.

Middle Point, which has several rocks off it a cable's length to the west and south, is rather more than $1\frac{1}{2}$ miles W. $\frac{1}{2}$ N. from Point Belles Amours. The former is the S.W., and the latter the

*Belles Amours
Harbour,
Eastern
Passage.*

*Western Pas-
sage.*

*Belles Amours
Harbour is se-
cure.*

Middle Point.

S.E. extreme of the peninsula of low land separating Middle Bay and Belle Amours Harbour.

Middle Ledges. The Middle Ledges lie off to the southward of Middle Point. Several of these ledges dry at low water, but the outermost, which is 600 fathoms off shore, has 15 feet least water. There is no safe passage between these ledges and the shore. Stony Point kept half a point open of Point Belles Amours, bearing E.N.E., will lead clear outside of them.

Five Leagues Point, Five Leagues Point, rather more than $1\frac{1}{2}$ miles W.N.W. from Middle Point, is the S.W. extreme of another low, but smaller peninsula, separating Five Leagues Harbour from Middle Bay. On this peninsula, $\frac{1}{4}$ of a mile to the N.E. of the extremity of the point, there is a remarkable isolated and precipitous hill nearly 200 feet high, which marks the position of Five Leagues Harbour from the westward.

and

Reef. There is a reef, partly above water, running out from Five Leagues Point, $\frac{1}{4}$ of a mile to the S.W., and the two Barrier Reefs extend to the distance of $1\frac{1}{2}$ miles to the westward of the same point, but are not joined to it.

The south extremes of Ledge and Belles Amours Points in one, bearing E. $\frac{1}{4}$ S., leads clear of the Barriers $\frac{1}{2}$ of a mile to the southward.

The Middle Ledges and the Barrier Reefs are the only dangers in the way of vessels approaching Middle Bay from the east or west.

Middle Bay. Middle Bay is a fine open roadstead, free from all danger, more than a mile wide, and extending inland 2 miles to the N.N.E. $\frac{3}{4}$ E. In the outer part of the bay, for the first mile in, the shore, on either side, should not be approached nearer than 150 fathoms; but further in it is quite bold, excepting in the heads of the coves. The depth of water in this bay is from 4 to 13 fathoms over sandy bottom.

West Cove. The west cove is a mile within the entrance on the west side of the bay. Its head is separated by a low and swampy isthmus from Five Leagues Harbour. In the mouth of this cove, in 4 or 5 fathoms, is the anchorage with westerly winds.

Shallop Cove. On the east side of the bay, $\frac{1}{4}$ of a mile within Middle Point, is Shallop Cove, sheltered by two or three small islets close to the shore. It is only fit for boats.

Peak Point. About the same distance further in, on the same side, is Peak Point high, and of granite. This point is forked—its south ex-

tremitry is a ragged, isolated mound or peak; and off its west side, *Middle Bay*, at the distance of half a cable, there is a large rock above water.

Isthmus Cove, with 3 fathoms water over mud bottom, is to the *Isthmus Cove*. S.E. of Peak Point, which is the N.W. point of the cove. It is a very small place, in which two or three fishing vessels are occasionally moored, under a reef which extends from the south side of the cove northward towards Peak Point. The reef affords indifferent shelter with W.S.W. winds, which blow right in with a heavy sea. The entrance between the reef and Peak Point is only 70 fathoms wide; neither is there much more room between the reef and the shore to the eastward.

To enter it you must keep Peak Point close on board; and when you are half a cable's length past it to the eastward, haul sharp round to the southward between the reef and the shore. The part of the cove, which runs in to the N.E. of Peak Point, is quite shoal. From this cove to Belles Amours Harbour, across the low isthmus, the distance is less than half a mile.

In the bay outside of Isthmus Cove is the usual anchorage in *Anchorage in Middle Bay*. 10 fathoms, sand bottom, with easterly winds; as off west cove is in westerly winds: and vessels shift from one to the other as the wind changes. Water may be obtained in Isthmus Cove, as well as in the head of the bay, where there are a few small trees. As there are no islands off this bay, and as it is sufficiently roomy for the largest ships to beat in and out, it affords a very convenient occasional stopping place for vessels. It is the only open roadstead on this coast.

Five Leagues Harbour hardly deserves the name. It is a cove *Five Leagues Harbour*. $\frac{1}{2}$ a mile deep, with $2\frac{1}{2}$ fathoms water. It is situated $\frac{3}{4}$ of a mile within, and on the West side of the point of the same name. It is altogether unfit for any thing larger than a schooner of 100 tons at the outside. The W.S.W. wind rolls in a considerable swell, and there would be no lying there, if it were not for the indifferent shelter afforded by the Barrier Reefs off its mouth. The channels leading in are about 300 fathoms wide, and on either side of the Barrier Reefs. Either from the southward, between them and Five Leagues Point; or from the westward, between them and the shore to the northward.

The course in, through the first of these channels, is N.E. by N.; *Eastern Entrance*. leaving Five Leagues Point and its reef a cable's length on the right. Two small rocks, which just cover at high water, lie off to the

GULF OF ST. LAWRENCE.

Five Leagues Harbour.

westward of the south point of the harbour, which is a rocky islet joined to the shore when the tide is out. The outermost of these rocks is distant 160 fathoms from the point. Leave them both on the right hand, passing between them and the west point of the harbour which is distant from them 2 cables. As soon as you are past these rocks, you will see the cove or harbour open to the eastward, and must haul into it, passing midway between South Point and a large rock above water distant from the point 150 fathoms to the N.W. Anchor in the middle, a cable's length within the entrance: for although there is water enough nearly to the head of the cove, and the anchorage is more secure further in, yet it becomes too narrow for a stranger, and would require the vessel to be moored head and stern.

Western Entrance.

To enter from the westward. Being to the westward of the Barrier Reefs, stand in to the northward till you can see the harbour open, bearing nothing to the northward of E. by N. Steer directly for it, and as soon as you are within the westernmost Barrier Reef, you will see two ledges just under water, and several small islets on the side of the mainland. The ledges will be near $\frac{1}{4}$ of a mile to the northward, or on your left, but your course will take you within a cable's length of Bis Islet, which is by itself, quite bold, $\frac{1}{4}$ of a mile off shore, about a mile from the entrance of the harbour, and opposite the centre of the Barrier Reefs. Pass the west point of the harbour as close as you please, continue your course right in, and anchor as before directed.

*Bis Islet.**Barrier Entrance.*

There is also a channel $\frac{1}{2}$ of a mile wide between the two Barrier Reefs, but they overlap in such a way as to make it difficult for a stranger. The two reefs cover an extent of $1\frac{1}{2}$ mile in an E.N.E. direction. There are parts of each of them that dry at low water, and the sea almost always breaks on them more or less.

Salmon Islet.

W. by N. $3\frac{1}{2}$ miles from Five Leagues Point, across a bay with several scattered ledges, brings us to Salmon Islet, which is nearly joined by a spit of sand, and close to, the S.E. extreme of Caribou Island, off which the shoal water extends nearly 400 fathoms to the S.E. Caribou Island is about 4 miles in circumference, and 220 feet high, above the sea, but it cannot be distinguished from the mainland in a vessel off the coast. Between this island and the mainland to the eastward of it, is the eastern entrance to Salmon Bay, a cable's length wide, but only 6 feet deep at low water. The other entrance to this deep bay is from Bonne Espe-

rance round to the northward of Caribou Island. There is plenty of water by this latter route, and also in the bay, which runs inland several miles to the N.E.; but as a vessel will be already in a harbour, before she arrives at the navigable entrance of this bay, I shall not swell this book by any further remarks respecting it, but refer to the chart, which will enable any one to find his way through a channel so perfectly sheltered from the sea. There are two houses just within the eastern entrance of Salmon Bay, on the mainland side.

An inspection of the chart will show that soundings in moderate depths of water extend sufficiently far off shore, every where between the Strait of Belle-isle and Salmon Bay, to warn a vessel of her approach to the coast, at night, or in foggy weather.

76. The Mainland has hitherto formed the coast line, but at Salmon Bay the islands commence, and continue 14 miles. They are of all shapes, sizes, and heights (less than 200 feet), and run in order westward under the names of Esquimaux, Old Fort, and Dog Islands. They are bare of trees, excepting some of those which are far in near the mainland. Off these islands lie many small rocks and ledges, the outermost of which are fully 4 miles from the mainland. To attempt to describe all these islands, or all the channels between them, would be an endless, and useless task: and a good chart, upon a large scale, will, in most cases, be far more useful than any written description. I shall, however, notice briefly the principal dangers off the islands, the principal channels, and especially Bonne Esperance, which is the best harbour upon this coast.

Whale Island, the south-eastermost of the Esquimaux Islands, lies the most to the magnetic south of all the islands; and, in consequence, shows as the extreme to vessels close in with the coast, either to the eastward, or westward. It is about $\frac{3}{4}$ of a mile long, in a N.E. and S.W. direction; and about $\frac{1}{2}$ of a mile broad. It does not exceed 100 feet in height, in the highest part; which is a roundish hill near the centre of the island, on which there is a beacon, or pile of stones, supporting a pile of driftwood. All vessels bound to Bonne Esperance endeavour to make this island. Its south point bears S. 84° W. true, or N.W. by W. $\frac{1}{2}$ W. by compass, $18\frac{1}{2}$ miles from the south point of Greenlet Island, in the entrance of the Strait of Belle-isle. A vessel, sailing from one to the other, will have soundings in moderate depths the whole way,

*Bonne Esperance.
Whale Reef.*

*S. W. Ledge
off Whale
Island.*

excepting for a cast or two off the mouth of Bonne Esperance harbour, within 3 miles of Whale Island. There are rocks, both above and under water, extending 300 fathoms off the S.W. point of Whale Island; but off its N.E. point the shoal water reaches only to the distance of 60 or 70 fathoms. There is also a ledge with 9 feet water, W. $\frac{1}{2}$ S. 350 fathoms from its S.W. point; and, lastly, there are several rocks, dry at low water, 100 fathoms off shore on the east side of the same point.

From Salmon Islet, before mentioned, the south point of Whale Island bears W.S.W. $\frac{1}{2}$ W. $4\frac{1}{2}$ miles. Within this line lie the islands which form the harbour of Bonne Esperance. Being very steep, and of bare granite, the largest of these islands look much higher than they really are; an effect which is also owing to the contrast of the much lower islands to the westward of them. There are none of them higher than 200 feet above the sea. There are beacons, or piles of stones upon almost every summit of these islands.

*Main Channel
to Bonne Es-
perance Har-
bour.*

Goddard Islet.

Bold Rock.

Goddard Rock.

Beacon Islet.

Tail Islet.

Link Islet.

Red Head.

Fish Islet.

*Chain and
Bonne Espe-
rance Islands.*

I now proceed to describe the main channel to Bonne Esperance harbour. Off the S.W. extreme of Caribou Island, there are two low islets, joined to each other, and to the island, by shoal water. The westernmost of these two islets is Goddard Islet; the S.W. point of which bears W. $\frac{1}{2}$ S. $1\frac{1}{2}$ miles from Salmon Islet, and has a small rock off it, 130 fathoms to the S.W. This rock is always above water and quite bold. Further out, bearing south, 350 fathoms from the S.W. point of Goddard Islet, there is a small ledge called Goddard Rock, which dries only at low water. These are the only dangers on the east side of the channel.

On the opposite side, bearing W.S.W. $\frac{1}{2}$ W. nearly a mile from Goddard Islet, is Beacon Islet; rather low, about 120 fathoms long, and with a pile of stones upon it. Tail Islet will be observed about three hundred fathoms to the S.W.; and Link and another low islet to the northward of Beacon Islet, but they are out of the way. To the westward of Beacon Islet, at the distance of $\frac{3}{4}$ of a mile, is Red Head, an island which bears E.N.E., about 900 fathoms from Whale Island. Fish Islet, a large low rock, is all that there is between these two last named islands. It lies west 300 fathoms from the south point of Red Head Island. Within Red Head, and lying in a line to the N.E., are Chain, and Bonne Esperance Islands: the former being formed of two peninsulas, joined by a narrow stony isthmus; and the latter

being about 150 feet high, and $\frac{1}{4}$ of a mile long. To the eastward of Bonne Esperance Island, at the distance of $\frac{1}{2}$ of a mile, is Lion Island. Between them there is a low islet, joined to Lion Island by shoal water, but leaving a narrow and difficult three fathoms channel, between it and Bonne Esperance Island. Lion Island consists of two steep islets, very nearly joined together by a low sandy isthmus. Off the east side of Lion Island, and at the distance of 50 fathoms, lies the Whelp, a rock always above water. Between this rock on the west, and Goddard and Caribou Islands on the east, may be termed the inner entrance from the Main Channel; it is 450 fathoms wide, and from 10 to 13 fathoms deep, with rock, sand, and mud bottom.

*Bonne Espe-
rance.
Lion Island.*

Whelp Rock.

To the eastward of Beacon Islet, at the distance of $\frac{1}{2}$ of a mile, lies the Watch, a small rock which always shows. About $\frac{1}{4}$ of a mile to the northward of this rock, and the same distance eastward of Link Islet, lies Breaking Ledge, which just covers at high water. This rock and ledge form the dangers on the west side of the outer entrance of the Main Channel, which is between them and Bold and Goddard Rocks, previously described as lying S.W. and S. from Goddard Islet. This outer entrance is 460 fathoms wide, 17 fathoms deep in the centre, and with 7 to 11 fathoms close to the dangers on either side. The only other dangers, and they are only dangerous to a very large vessel, are two 4 fathom patches, the easternmost of which (Middle Patch) bears S. $\frac{1}{2}$ of a mile from Beacon Island; and the other (Whale Patch) E. by S., nearly half a mile from the centre of Whale Island. There is foul and rocky ground, with from 5 to 9 fathoms water between these patches, which may be avoided by a vessel approaching the harbour from the westward, by not coming into less than 10 fathoms, until the leading marks for hauling into the harbour come on.

*Breaking
Ledge.*

*Middle and
Whale Patches.*

The prevailing winds along the coast are favourable for entering Bonne Esperance, and there will be no difficulty if the foregoing description and the following directions be attended to.

*Bonne Espe-
rance Harbour.*

Being off the coast to the eastward, and with an easterly wind, stand in towards Caribou Island, the position of which with respect to Whale Island has been pointed out. When you arrive at the distance of half a mile from the south side of Caribou Island, you will be in 10 fathoms, and will perceive the south sides of Beacon and Red Head Isles, and the north side of Fish Islet come in one, bearing W. $\frac{1}{4}$ N. Bear up upon this

*from the
Eastward.*

Bonne Esperance Harbour, leading mark, or, if you are not sure of the islands, steer west, with the lead going, and a trusty person in the rigging to look out for Goddard Rock, to the southward of Goddard Island. You will have about 9 fathoms at low water, until you are past that ledge, when you will deepen suddenly into 15 or 19 fathoms, and will then be in the channel. You must now haul in immediately N. by E., and will see Whelp Rock right ahead, and in one with the west side of House Island, which is low, has a house upon it, difficult to be seen, and lies close under the mainland at the distance of about a mile from Lion Island. Run in upon this mark or bearing, and when you are past Bold Rock, off the S.W. point of Goddard Island, haul a little to the eastward, so as to give Lion Bank and the Whelp a berth of a cable's length. As soon as you are within this rock, bear up W.N.W., and run close along the inner sides of Lion and Bonne Esperance Islands, passing between the latter and Anchor Island (distant from it 200 fathoms to the northward) into the harbour, where you may choose your berth, and will find from 12 to 16 fathoms over muddy bottom. In passing between Bonne Esperance and Anchor Islands, you will have no less than 5 fathoms, unless you go nearer to the islands than 30 fathoms. Everywhere else there is much deeper water.

from the westward.

Being to the westward with a westerly wind, pass the south point of Whale Island at the distance of half a mile, steering none to the northward of E. by N. to avoid the 4 fathom patches, until you bring Whelp Rock, and the west side of House Island in one bearing N. by E.; then haul in upon that leading mark or bearing, and proceed as before: excepting in case of the wind not being free enough to allow of your passing between Bonne Esperance and Anchor Islands. In this case you must go round to the northward of Anchor Island, and must not haul up higher than N.N.W. $\frac{1}{2}$ W., nor close in the Whelp Rock with the S.W. extreme of Goddard Island, until you are past a short reef which covers at high water, and lies nearly 200 fathoms off to the eastward of Anchor Island, and is the only danger within the bay. Whelp Rock and Goddard Island touching, clear the shoal water round this reef at the distance of 50 fathoms. As soon as you are past Anchor Reef, you may haul to the wind, and minding that shoal water extends 150 fathoms to the northward of Grand Island, (the high and large island next westward of Bonne

Anchor Reef.

Esperance Island) you may make a tack into the harbour, or anchor anywhere in the bay, where, although the depth of water is inconveniently great, yet the bottom is everywhere of mud, and the shelter complete in all winds. In short, the whole bay of Bonne Esperance may be considered as a harbour, in which there is room for a fleet of line of battle ships. Wood and water may be had in abundance from the mainland, but not from the islands. The part of this bay which is properly called the harbour is the space, 300 fathoms wide, between Bonne Esperance and Grand Islands, and to the southward and westward of Anchor Island. There is a clear channel from it, by the north-westward, between the islands and the main, to the eastern entrance of Esquimaux Bay, distant $1\frac{1}{2}$ miles. Star Island, small, round, and high, will be seen in the middle, and must be kept close on board to the northward, and afterwards the mainland, for shallow water extends off the north side of the islands half way across the channel.

The other channels into Bonne Esperance require only a brief notice. Shallop Channel, between Bonne Esperance and Grand Islands, is very narrow, and only 2 fathoms deep at low water. It may be approached from either side of Whale Island, passing Fish Islet, and then keeping the western sides of Red Head, Chain, and Bonne Esperance Islands close on board into the harbour.

Esquimaux Channel so called because it leads direct to the eastern entrance of Esquimaux Bay, should be approached through Whale Channel between Whale and Tent Islands, the latter island being the next westward of the former. Whale Channel is 800 fathoms wide, with from 10 to 18 fathoms water. There are no dangers in it that cannot be seen, excepting the 9 feet ledge mentioned as lying off the S.W. point of Whale Island: for the rocks, which lie half a mile off to the S.W. of Tent Island, are never entirely covered. The course through the centre of Whale Channel and across the wide, deep, and open space within it, to the entrance of Esquimaux Channel, is N.E. $\frac{1}{2}$ N. Esquimaux Channel is between Grand and Fair Islands on the east, and Spit and Stone Islands on the west. Between the inner islands (Fair and Stone) is the narrowest part, only 75 fathoms wide, and 5 fathoms deep. In passing through this, the equally narrow entrance to Esquimaux Bay will be seen bearing N.N.E., distant half a mile, and the vessel must stand close over to it,

Bonne Esperance Harbour.

North-west Channel.

before she hauls to the eastward into Bonne Esperance. Then keeping within a cable's length of the main shore, she should steer for the south side of Star Island, already mentioned; and passing close to it continue her course towards Anchor Island till past Grand Island, when she may haul to the southward into the harbour. Esquimaux Channel is the only other besides Main Channel, which has water enough for large ships, but it is too narrow for vessels of any size excepting in cases of emergency.

West Channel.

The remaining channel, between Spit and Stone Islands on the east, and Esquimaux Island proper on the west, is called West Channel; and is only fit for small vessels because of a bar with only 2 fathoms water across from Stone Island to a point of Esquimaux Island, which is close to the S.W. entrance of Esquimaux Bay.

Esquimaux Island and Bay.

Esquimaux Island is a large island, 7 or 8 miles in circumference lying in the mouth of the bay of the same name. There are many islands outside of it, and it cannot be distinguished from the mainland from a vessel off the coast.

Eastern Entrance to the Bay,

and to

the River.

Mr. Chevalier's House and Trading Post.

The eastern entrance to the bay is by a very narrow channel between the island and mainland to the eastward. This channel continues for $1\frac{1}{2}$ miles to the N.N.E., and then opens into a wide space with two islets in it. But if the mainland to the eastward be followed, it will lead to the entrance of the Esquimaux River, where Mr. Chevalier's house and Trading Post will be seen on a sandy point, backed with spruce trees, on the west side, and rather more than 2 miles from Esquimaux Island.* Our boats ascended the river 5 miles above Mr. Chevalier's house, passing through two lakes, in the uppermost of which there were 26 fathoms water. These lakes are separated by shallow and narrow channels. The river is navigated by canoes for many miles inland, and abounds with salmon.

Salmon.

Western Channel from Esquimaux Bay.

Only small schooners can pass through the narrow channel between Esquimaux Island and the main to the eastward: but here is water enough for larger vessels to the westward of the island. I must however refer to the chart for this route, for it

* Mr. Chevalier has resided here all his life, and is the seigneur of an extensive domain extending several leagues on either side of Esquimaux River, and far back into the country. He holds this barren lordship (valuable for its salmon and seal fisheries) by grant from the King of France, given originally to some of the early French Fur Traders.

would be quite impossible to convey any intelligible idea of such an intricate navigation through such a multitude of islands.

Here I may as well mention that there is a channel 3 fathoms deep in the shallowest part, and in general with a great depth of water, between the islands and the main, from Bonne Esperance to Mistanoke: but it can only be shown on a chart upon a large scale; no written description would be of any avail.

Proceeding westward outside of the islands $4\frac{1}{2}$ miles W. by N. from the south point of Whale Island brings us to the southermost of the Fort Rocks; and there is no channel for any vessels between the islands, in this distance, excepting Whale Channel already mentioned. The Fort Rocks are a number of low rocks extending 650 fathoms to the S.W. from the S.W. point of Old Fort Island; which is of a very moderate height, and about $1\frac{1}{2}$ miles in diameter. From this island a number of smaller islands extend north-eastward into the mouth of Esquimaux Bay. There are also a number of steep and high islands extending north-westward from Old Fort Island, across the bay of the same name. There are deep water channels, leading to Old Fort Bay between the islands last mentioned, but too intricate for a written description to be useful. Old Fort Channel is the principal of those leading in from sea, between the Fort Rocks and Mermot Islet, and further in between Old Fort Island and Channel Island; which last, together with Crumb Island to the N.E., must be kept close on board until you find yourself in the wide and open space within the islands, and off the mouth of Old Fort Bay, which runs into the N.E., about 4 miles beyond the inner islands with deep water to its head. Being midway between the Fort Rocks and Mermot Islet, the course in through Old Fort Channel will be N.E. $\frac{1}{2}$ N., with very deep water the whole way. Mermot Islet is low, has a ledge off it $\frac{1}{2}$ of a mile to the S.W., and bears W.N.W. $1\frac{1}{2}$ miles from the outer Fort Rock. This wide opening through the outer islands is the only navigable one besides Whale Channel. Through it vessels may run in between the islands in the way I have mentioned, or westward between the Dog Islands and the main, but this I must leave the chart to explain. In some places between the islands there is more than 50 fathoms of water, and the nearer the main the fewer the ledges.

To the northward of Mermot Islet is the Eider group, and

*Dog Islands
and Rocks.*

westward of them the Dog Islands surrounded by rocks and ledges innumerable. The outermost of these rocks lie 4 miles W. by N. from the outermost Fort Rock. The south-westernmost of the Dog Islands are very low, but the Highest Islands, next the main, although small, are of considerable elevation. There is good anchorage between them and the main, but it can only be got at easily by running down with a westerly wind from Shecatica, close along the main land and in the channel between the latter and the scattered rocks and ledges which lie off it; where there is very deep water the whole way, nearly 60 fathoms in some places.

Porpoise Rocks.

The Porpoise Rocks, $\frac{3}{4}$ of a mile off shore, are two or three small black rocks above water lying W.N.W. $\frac{1}{2}$ W. $3\frac{1}{2}$ miles from the outer Dog Rocks, and an equal distance in the same direction will take us to Boulet Islet.

Boulet Islet.

The Boulet, about 150 fathoms in diameter, is a smooth round backed islet, green at the top, and about 70 feet in height. Together with the opening to Lobster Bay, which bears from it E.N.E., $1\frac{1}{4}$ miles, it serves to point out the position of a vessel off the coast.

*Crab Island,
Four Rocks,
and Inner Islet.*

Crab Island is half a mile N.W. from it, and the Four Rocks (within which is Inner Islet) $4\frac{1}{2}$ miles W. by N. These are the only islets between it and Shecatica; but there are many rocks and ledges between them, and also off the Boulet to seaward.

Peril Rock.

Of these the most dangerous is the Peril Rock, which is very small, dries at half-tide, and lies $1\frac{1}{3}$ miles S.S.W. from the Boulet. This rock is the outermost, and greatest danger off this part of the coast: the sea, however, almost always breaks upon it, and also upon the others which lie between it and the Four Rocks. There is no warning by the hand-lead in approaching any of these rocks.

Lobster Bay.

Lobster Bay, the position of which has been just mentioned, is a narrow inlet running to the N.E. 4 miles, and quite open. It is from 170 to 250 fathoms wide, between high and steep rocky shores. In the entrance there is 35 fathoms, diminishing to 14 fathoms half way up: after which there is anchorage quite to its head, with muddy bottom everywhere; but it is completely exposed to S.W. winds. Several very small streams enter the head of the inlet. There are two small islets close off the east point of the entrance of Lobster Bay, they must be left on the right hand going in.

Rocky Bay, a mile to the eastward of Lobster Bay, runs in *Rocky Bay* N.E. by E. $1\frac{3}{4}$ miles, and is about 120 fathoms wide, between steep and high rocky shores. There are 39 fathoms in its entrance, but the depth soon diminishes to 16 fathoms, and then shoals gradually to its head. One mile within the entrance, on the S.E. side, there is a house and Fish Stage at a small cove, *Fish Stage*, in which the fishermen anchor in 5 fathoms, mud bottom, well sheltered from all winds. A small stream enters the head of this bay. There is nothing in the way in running up either of these bays.

Napetepee Bay is a straight and narrow inlet, very similar to *Napetepee Bay*. Lobster Bay. Its entrance is about $1\frac{1}{2}$ miles to the eastward of Shecatiga, and $1\frac{1}{2}$ miles N.E. by N. from the Four Rocks, which, together with the Inner Islet just within them, must be left to the eastward in approaching this bay. The course and distance up Napetepee, to its head, is N.E. $\frac{1}{2}$ E. nearly $4\frac{1}{2}$ miles. In a vessel out at sea this bay shows open, upon that bearing, and, together with the Boulet, points out the position of Mistanoque Harbour, which would not be easily made out by a stranger, if it were not for these remarkable features of the coast to the eastward of it.

Just within the mouth of Napetepee there are some rocks above water, which must be left a cable's length distant on the right hand going in. Within these rocks the bay is 140 fathoms wide, with high and precipitous shores, especially on the west side. At the distance of $1\frac{1}{2}$ miles, within the entrance, there is a small islet, which must also be left on the right hand; and after passing it, the east shore must be kept close aboard until through the Narrows. Half a mile further in, the bay is only 80 fathoms wide; but it soon expands again to 300 fathoms. The depth of water decreases from 30 fathoms in the entrance to 7 in the Narrows, and then increases to 27 fathoms with muddy bottom. There is no shelter with a wind right in, but much sea cannot roll into so narrow a place. Several small streams run into this bay; but the principal stream is on the S.E. side, $\frac{1}{4}$ of a mile from its head, and is the outlet of a considerable lake, which cannot easily be entered by a boat excepting at high water. A river abounding with salmon *Salmon Fishery* enters this lake, and an old hunter and fisherman lives near its mouth.

*Napetepee,
Lobster and
Rocky Bays.*

The three bays, which I have just described, have no dangers in them, but they are, nevertheless, by no means desirable places for vessels to go into, being so narrow, and having such deep water. Besides there is no getting out of them without a northerly wind, which in the summer months seldom occurs. Lobster and Rocky Bays are preferable to Napetepee; and the safe and proper way of approaching them, is from the westward, with a westerly wind, passing inshore between Shecatica and the Four Rocks; and then eastward close along the mainland, and between it and Inner Islet, Crab Islet and the Boulet.

Inner Channel.

Inner Islet is 550, Crab Islet 350, and the Boulet 670 fathoms, off shore; and the depth of water between them and the shore is from 33 to 48 fathoms, over muddy bottom. This deep water channel, close along the mainland free from all dangers, continues eastward all the way to the Dog Islands. Vessels might pass between the latter and the Porpoise Rocks in clear weather, when shoal water could be readily seen, and when there is a sea running heavy enough to break upon the ledges, but the other is the safer plan of proceeding.

*Shecatica
Island.*

The N.E. point of Shecatica Island bears N.W. $\frac{3}{4}$ N. a long mile from the Four Rocks, and W.N.W. $3\frac{1}{2}$ miles from Boulet Islet. The mainland from the Dog Islands to Shecatica is of steep granitic hills, (not exceeding 300 feet in height,) with deep water close into the rocks, and with only the few small islets and ledges off it which I have mentioned.

The two contiguous islands of Shecatica and Mistanoque lie close to the mainland, and would be difficult to distinguish from it, if it were not for the Boulet, and the remarkable opening of Napetepee to the eastward; and the equally remarkable Shag Islet to the westward. Shecatica is the eastern, the smaller, and the higher island of the two, being half a mile long and 150 feet high.

*Mistanoque
Island.*

Mistanoque, separated from Shecatica by an unnavigable channel 150 fathoms wide, is nearly $1\frac{1}{4}$ miles long, parallel to the coast; broken into coves on the outside, and in the highest part 120 feet above the sea. It lies directly across the mouth of Mistanoque Bay, which is 140 fathoms wide, and 23 fathoms deep in the entrance, expanding to the breadth of 280 fathoms within, and running inland rather more than 3 miles N.E. $\frac{1}{2}$ N. The depth of water in this bay is from 27 fathoms in the centre, to

*Mistanoque
Bay.*

17 fathoms at the sides close to the rocks. It is not until we arrive within less than half a mile of its head, that the depth decreases so as to be convenient for anchoring. The bottom is everywhere of mud, there are no dangers, and wood and water are plentiful. Directly opposite the mouth of this bay there is a small bay on the north side of the island, and this is the Harbour of Mistanoque in which there is from 15 to 20 fathoms, mud bottom. Vessels may however anchor in less water, a short distance to the eastward, between the island and the east point of the bay, where the depth is 12 fathoms, but the channel is there only 80 fathoms wide. Vessels must moor in any case.

Mistanoque Harbour.

Enter Islet lies nearly half a mile to the westward of Mistanoque, and 90 fathoms further Diver Islet, off which to the southward a reef of rocks runs out 130 fathoms. Both these islets are low. To the N.W. of them, at the distance of 400 fathoms lies a group of small islands. The west channel to Mistanoque Bay is between this group and Diver and Enter Islands: it is nearly 400 fathoms wide and 23 fathoms deep, and free from dangers.

Enter and Diver Islets.

There is nothing immediately outside or off Shecatia, Mistanoque, Enter, or Diver Islands, so that no other directions seem necessary than to run through the centre of either channel which may be preferred. The south passage between Enter Island and the west shore of Mistanoque is however the best channel, being 400 fathoms wide, and upwards of 40 fathoms deep, and bold to the rocks on either side. On arriving at the western entrance, which is 80 fathoms wide, and 9 fathoms deep, give the N.W. point of Mistanoque a berth of about 50 fathoms, or keep well over to the mainland side of the entrance: but as soon as you have entered this narrow channel, keep Mistanoque on board, because there is shoal water off the west side of the entrance of the bay to the distance of 30 fathoms.

Western Entrance to Mistanoque Harbour.

In entering from the eastward, the passage between Shecatia and the Four Rocks, which are quite bold, is more than a mile wide, with very deep water; but you must give the N.E. point of Shecatia a berth of 100 fathoms until the channel between it and the main opens, bearing W.N.W.: for there are rocks off that point to the distance of 60 fathoms. The N.W. point of Shecatia (on which there is the hut of a seal fisherman) must be kept close on board, within the distance of 10 or 15 fathoms; for there is shoal water across a very small bay of the main,

Eastern Entrance.

Mistanoque Harbour.

opposite to it. The channel here being only 30 fathoms wide and 3 fathoms deep, this eastern passage is only fit for small vessels.

Mistanoque, though small, and with inconveniently deep water, is nevertheless a valuable harbour on a coast where good ports, fit for large vessels, are so scarce. The absence of dangers outside, the easy and immediate access, in either of the prevailing winds, in consequence of its having two entrances, are advantages possessed by none of the other small harbours to the westward, which may be equal to it in other respects.

Shag Islet.

The Shag Islet, bearing W. $\frac{1}{4}$ S. $7\frac{1}{2}$ miles from Mistanoque, is the best guide for making the latter from the westward, as the Boulet, &c., as already mentioned, is from the eastward. The Shag Islet is very remarkable, being small and high, with a round peaked hill looking green in the middle. There are many rocks off to the S.E. by E. from Shag Islet; the outermost of which, distant from the islet 2 miles, is the Shag Rock. Being $\frac{1}{4}$ of a mile off to the southward of the Shag Rock, the south point of Shecatica will bear E.N.E. about 8 miles; and a vessel running upon this course, will pass more than a mile outside of the Three Rocks, which are small and close together, lying nearly half way from the Shag Rock towards Mistanoque: and before she runs as far as Mistanoque, she will recognize Diver, and Enter Islands, one mile within her course, and may safely haul in towards them.

*Shag Rock.**Course to clear all Dangers.*

The course along the coast, from off Whale Island, so as to clear all dangers, to off Shecatica Island, is W. by N.: and the distance from the one to the other is $19\frac{1}{2}$ miles. Off Whale Island, soundings in less than 50 fathoms extend little more than $1\frac{1}{2}$ miles; and at Mistanoque the deep water approaches close to the shore: but between these points there are soundings 3 or 4 miles off the outer rocks of the Old Fort and Dog Islands, and fully 6 miles from the mainland. Off the Boulet Islet the depth is usually between 30 and 40 fathoms, over a varying bottom of sand, gravel, rock, and broken shells, but this will be seen in the chart.

*Soundings off the Coast.**Lane's Survey.*

77. Our survey, from the Strait of Belle-isle westward, ended at Mistanoque inclusive, and recommenced again at Grand Mecattina. The intermediate coast was surveyed in 1768 by Mr. Michael Lane, R.N. We examined it with his original chart in hand, and although his survey does not possess the exactness

which superior instruments and an improved system of hydro-*Lane's Survey.*
graphy gives to modern maritime surveys, yet it is such as to
confer honour on his memory, being quite sufficiently correct for
the usual purposes of navigation. The directions in this article
will therefore be taken, in part, from his original writing at the
foot of his chart. But I must first observe, that we carefully
determined the latitude and longitude of the two extremities of
his survey, and discovered that, although the relative bearing of
his points is very nearly correct, yet the scale of his work errs in
excess nearly 5 miles in the whole distance; which from the
south extreme of Mistanoque Island, to the south extreme of
Cape Mecattina, is $43\frac{1}{2}$, instead of 48 miles; the bearing
being nearly S.W. true. The variation has greatly changed *Change of*
since Lane's time, when it was 26° west. In the year 1834 it *Variation.*
was between 32° and 33° west; and the course by compass, so *Course to clear*
as to pass outside, and clear of all danger, from a mile off the south *Dangers.*
extremity of Mistanoque, to the same distance outside Flat Island,
is now W.S.W., and the distance 36 miles. The same course
continued will pass about 2 miles outside the Murr Rocks, which
are off Cape Mecattina, and at the distance of 41 miles from
Mistanoque. I must refer to Lane's chart, corrected in scale
and in latitude and longitude by my observations, for the soundings *Soundings*
along this course; merely remarking that they vary irregularly, *irregular.*
from 28 fathoms, to no ground at 110 fathoms; and that the
nature of the bottom is equally changeable.

The coast between Mistanoque and Cape Mecattina is broken *Description of*
into immense bays and inlets, between very large islands of *the Coast.*
moderate height above the sea and partially covered with moss.
Many smaller islands, islets, and rocks are interspersed; and
outside all, the coast is lined with small islets, rocks, and ledges,
in groups, or scattered here and there. The greatest difficulty is
to pass safely through between these last; for within the islands,
in most of the channels, and wide spaces between them, as well
as in the bays of the mainland, there is a great depth of water,
amounting in one or two places to 50 or 60, and often exceeding
30 fathoms. In these deep water channels and bays, which are
so intricate as to defy any attempt at a written description, small
rocks are not nearly so numerous as they are outside, and are for
the most part above water. The shores too of both the main and
islands are almost everywhere quite bold; so that the largest

*Intricacy of
the Channels.*

ships might be conducted through many parts of these channels, and whole fleets might lie hidden in these obscure recesses full 15 miles in from the outer rocks. The entrances from the sea to these channels and bays, through the outer islets and rocks, are in general too intricate for any directions to be of use; I shall therefore refer to the chart for them, and merely introduce here, with slight alteration, Lane's description of, and directions for entering those harbours, which, although small, might be of occasional use to shipping; and I shall correct the magnetic bearings and courses, so as to make them agree with the present variation.

*Cumberland
Harbour.*

Cumberland Harbour, between Dukes Island on the west, and Cumberland Island on the east, bears N. by E. $\frac{1}{2}$ E. 3 miles, from the outer Shag Rock, (Ar. 76,) and is known by a remarkable and high hill on the mainland, about $3\frac{1}{2}$ leagues north from the entrance of the harbour. That hill is the highest in the neighbourhood, and resembles a castle at the top, having steep cliffs like walls. The islands forming the harbour are of moderate height, the easternmost making in two round hills. This harbour should be approached from between the Shag Rock and the Three Rocks, the latter being about $2\frac{1}{2}$ miles E.N.E. from the former. In sailing in there is no danger in the way, but what appears above water, excepting a small rock, which lies S. by W., rather more than half a mile from the west point of entrance. The entrance is about 200 fathoms wide. As soon as you arrive within its outer points, haul over to the west side, and run along it to the inner point on that side, bearing N. by W. $\frac{1}{2}$ W. about $\frac{1}{4}$ of a mile from the outer east point of entrance. As soon as you arrive there, you may haul to the eastward, and anchor where you please in from 7 to 20 fathoms water over good ground. This is an excellent harbour, the best and easiest of access on this coast. It has depth and room enough for the largest ships. Good water can be had in plenty on the east side of the harbour, but for wood you must go up Shecatia Bay. Shecatia Bay lies 3 or 4 miles to the north eastward of the harbour, and runs inland to the northward many miles. It has many islands, branches, and narrow crooked passages, too intricate for any to attempt who are not perfectly acquainted with the coast.

*Anchorage.**Good Water.**Shecatia Bay.**Sandy
Harbour.*

Sandy Harbour, in the large island of the same name, lies N.N.W. $\frac{1}{2}$ W. $2\frac{1}{2}$ miles from Shag Island (Ar. 76.) To sail into this harbour you must pass to the eastward of the Egg Rocks

(bearing N.W. by W. $1\frac{1}{2}$ miles, from Shag Island,) and keep *Sandy Harbour.* the starboard point of the bay, (which is the west extreme of *Dukes Island.* Dukes Island, bearing N.E., more than half a mile from the Egg Rocks,) on board in going in. You will then see a small rock above water, to the northward, which lies over towards the east side off the entrance of the harbour. You may pass on either side of that rock, and then steer in N.N.E. $\frac{1}{2}$ E., for the harbour, there being nothing in the way but what appears. After you are in through the entrance, which is about two cables wide, you must haul to the N.W. into the harbour, and choose your berth in 5 or 6 fathoms. *Anchorage.* This is a very safe harbour, with good ground. There is no wood to be had, but plenty of water. On approaching Sandy Harbour, there are two ledges under water to be avoided. The first of *Two Ledges of Rock.* these bears west from the Shag Rock, and south from the Shag Island, being distant from the latter 1 mile. The second bears S. $\frac{1}{2}$ E., nearly a mile from the east side of the Egg Rocks, and W. by N. from the summit of Shag Island. There is a small reef *Shag Island Reef.* with shoal water extending a $\frac{1}{4}$ of a mile from Shag Island towards this ledge, leaving a deep channel between, more than $\frac{3}{4}$ of a mile wide. The course through the centre of this channel, direct for the west extreme of Dukes Island, before mentioned, is N. $\frac{1}{2}$ W.

Port Augustine is a very small harbour, in which small *Port Augustine.* vessels may moor. It has a very narrow and intricate entrance, and is fit for small craft only. The approach to it is to the westward of Augustine Chain, which is a chain of small islets, the *Augustine Chain.* outermost of which is a round smooth rock, with a high black rock half a mile to the westward of it. Between these last named rocks, there is a ledge which shows at one third ebb. The passage is on either side of this ledge, and then northward along the west side of Augustine Chain, but it deserves no further description. *Mr. Kennedy's Trading Post.* Mr. Kennedy's seal fishing and trading post is at Port Augustine.

The south extremity of Augustine Chain bears W. $\frac{1}{2}$ S. about 7 miles from Shag Island. Between them lies Square Channel, the *Square Channel.* largest in between the islands, towards the mainland. It is too intricate for description; but 14 or 15 miles up it, in a N.W. $\frac{1}{2}$ N. direction, is the entrance of the River Augustine with a sand *Augustine River.* bar across it, dry at low water. There is plenty of wood at this river.

Eagle Harbour in Long Island has room and depth enough *Long Island, Eagle Harbour.* for the largest ships within, but the entrances are too narrow for

Eagle Harbour.

Fox Islands.

anything but small vessels. The east passage, between the islets which form the harbour, and Long Island, bears about N.N.E. $2\frac{1}{2}$ miles from the Fox Islands, and is the best and deepest, but has only 3 fathoms of water. This part of the coast is very dangerous, being lined with small low islets and rocks, both above and under water, and nothing but a chart upon a large scale would enable any one to find Eagle Harbour. The approach to it however is on either side of the Fox Islands, which bear N.E. $\frac{1}{2}$ N., 9 miles from Treble Hill Islet, and W. about 14 miles from Augustine Chain.

Fish Harbour.

Fish Harbour, bearing N. $\frac{1}{2}$ W., $4\frac{1}{2}$ miles from the Bottle, at the north extreme of the Great Mecattina Island, is a small cove of the mainland running into the westward, with a small island covered with wood, and hence called Wood Island, lying off its entrance. There is a passage on either side of Wood Island, but that to the northward is the best, there being a ledge in the bay to the southward of the island, part of which however always shows; and a rock, with 2 feet least water, S.S.E. $\frac{1}{2}$ E., nearly $\frac{1}{2}$ of a mile from the east point of Wood Island. In the cove within the island there are 7 or 8 fathoms with good ground and room to moor. It is, however, only fit for small vessels. Both wood and

Wood Island.

Two-foot Rock.

Mr. Robinson's Trading Post.

water may be obtained, and Mr. Robinson has a seal fishing and trading establishment at this place. There is no danger, but what appears, in approaching this harbour from either side of Great Mecattina Island, excepting the ledges which I have mentioned.

Seal Point.

Ha-Ha Bay.

Seal Point, about a mile to the N.E. of Wood Island, is the west point of entrance into Ha-Ha Bay. The islands to the eastward contract the channel into this bay, to the breadth of about a quarter of a mile, but there is plenty of water, and no danger but what appears above water. The best channel is close along the mainland, between Seal Point and Round Islet, leaving all the islets and rocks to the eastward. The bay runs in about 8 miles, N.E. by N., with a depth of water exceeding 60 fathoms in one part, and there are many good anchoring places, but as it is entirely out of the way of vessels, I shall not unnecessarily swell these remarks with that which is clearly shown on the chart.

Mainland not distinguishable.

From Shecatia Bay to Ha-Ha Bay, the mainland does not appear, as the islands, great and small, and of different heights above the sea, are so numerous and so near together,

that the coast cannot be distinguished till a vessel is among them. There are many places where vessels may anchor among these islands, of which the best and easiest of access have been noticed.

Great Mecattina Island is about $3\frac{1}{2}$ miles long, north and south; and about 3 miles wide. It is distant rather more than 2 miles from Red Point, the nearest part of the mainland to the N.W. The central part of the island is the highest, and estimated at about 500 feet above the sea. The granitic hills of this island are fissured in a very remarkable manner, by empty basaltic dykes traversing the island, in a N.E. and S.W. direction, from one side to the other. These features, together with the position of the island, in relation to the high land inside of Cape Mecattina, 4 or 5 miles from it to the W.N.W., distinguish this island from any other land in the gulf.

The Bottle is a high and round islet, nearly joined to the north point of Great Mecattina Island. There is a small rock above water close off it, to the N.W. by N.; and at the distance of about half a mile in the same direction, a patch of rocks with about 4 fathoms least water. Round Head on the west side is a high peninsula, connected to the island by a low isthmus. An islet and small rock, at the distance of $\frac{1}{2}$ and 1 mile respectively, lie off the south point of the island. E. by S., about 3 miles from the centre of the island, lies Treble Hill Island. S.S.E. $\frac{1}{2}$ E. 3 miles from the south point lies Flat Island, and S.W., about 4 miles from the same point of the island, lie the two Murr Islets, about a quarter of a mile apart, of considerable height, flat at the top, and precipitous all round. Treble Hill and Flat Islands are quite bold all round, and so also are the Murr Islets, which swarm with sea-fowl. The Murr Rocks are two small and low rocks above water, lying about half a mile to the S.E. of the southmost Murr Islet. To the N.E. by E., and more than a quarter of a mile from the easternmost Murr Rock, there lies a ledge on which the sea generally breaks.

The high N.E. point of Great Mecattina Island is called Bluff Head, and between it and the Bottle is a cove, one mile deep, and about 2 cables wide, called Island Harbour. This harbour is sheltered from easterly winds by a cluster of small islets and rocks, lying off its mouth, and leaving a safe passage on either side of them. If you use the south passage, keep Bluff Head on board, and if the north passage, pass between the cluster just mentioned, and a small rock by itself, lying a quarter of a mile to the N.W. of it,

Island Harbour.

and a cable's length from the shore of the Great island. The anchorage is near the head of the cove, in from 14 to 20 fathoms water over good ground, and both wood and water may be had.

Mecattina Harbour.

Mecattina Harbour, lying under the high land of Mecattina, is distant about $5\frac{1}{2}$ miles N. by W. $\frac{1}{2}$ W. from the Murr Islets; about $3\frac{1}{2}$ miles N.W. by W. $\frac{1}{2}$ W. from Round Head in Great Island; and N.E., $2\frac{1}{2}$ miles from Cape Mecattina. It is a very small but safe harbour, between Mecattina Island and the mainland; being only 28 fathoms wide in the western entrance, and 60 or 70 fathoms wide within. In a vessel of any size, it is therefore necessary to moor head and stern, and with hawsers to the shore. The depth within is 6 and 7 fathoms over good ground; but only 3 fathoms at low water can be carried in through either entrance. In the small bay between Mutton and Mecattina Islands, wherein is the western entrance, there is no anchorage in consequence of the great depth of water; but there is no danger in the way, and it is only necessary to keep in the middle, to pass safely through the narrow western entrance.

*Western Entrance.**Eastern Entrance.**Anchorage outside.**Dead Cove.**Gull Islet.*

The eastern entrance is rendered difficult by a reef of rocks under water, running across it to the northward from the north point of the island, and should only be attempted in fine weather, unless by those who are perfectly acquainted with the place. Strangers in fine weather may anchor outside, between the east end of the island and the main, and send a boat in to examine the channel. The directions, however, for sailing in are as follows:—From the east point of the island steer N. by W. over to the mainland, and keep it close on board, until you bring the N.W. point of the island, at the western entrance, on with the point of the mainland at the eastern entrance; the latter point being the south point of Dead Cove, which is small, open to the eastward and immediately to the northward of the eastern entrance of the harbour. Sail in with this mark on, till the north extreme of the island and the north extreme of Gull Islet come in one. You will then be within the reef, and must haul to the southward, towards the island, to avoid a ledge which stretches off the south point of Dead Cove. Being close over to the island, you must haul to the westward into the harbour. I have given the sense of these directions of Lane, because they may be useful to small vessels, or to others in light winds, a smooth sea, and fine weather, but under any other circumstances the slightest mistake or want of care on the part of the

helmsman, would place the vessel on shore; for the channel is so narrow, that there is scarcely room for a vessel to turn in it, or to allow of time for her to answer her helm in taking the turns which are required. The harbour is not above half the size assigned it in the book containing Cook's surveys, wherein there is a plan of it correct in every other respect. Gull Islet lies E. by S. nearly a mile from the east end of Mecattina Island, and there is no danger between them; but if a vessel approaching Mecattina Harbour from the eastward wishes to pass between Gull Islet and the main, she must keep either the one or the other on board, in order to avoid the ledge, with 3 feet least water which lies nearly half way between them. Wood and water may be obtained in Mecattina Harbour, and there is a Canadian residing there, who carries on the seal-fishery.

*Mecattina
Harbour.*

Gull Islet.

*Wood and
Water.
Seal Fishery.*

Portage Bay is on the east side of Cape Mecattina, about 2 miles N. by E. from its south extremity, and a long mile to the westward of Mecattina Harbour, Mutton Island lying between them. This bay runs in about $1\frac{1}{2}$ miles to the northward, between steep and high hills, fissured like Great Island, and there is a rapid river at its head. The deep water, with space for a vessel to anchor, extends only about two cables' length within the entrance, and there is a snug cove on the east side for small vessels. There is a small and moderately high islet in the mouth of this bay, lying over towards the east side, and this forms a harbour in which vessels of considerable size might find shelter in time of need, although it is inconveniently small for general use, like most of the harbours on this coast. The passage to the eastward of the islet is only 2 fathoms deep, and so narrow as to be fit only for very small vessels. The western entrance is about a cable's length wide, and from 6 to 8 fathoms deep. There is still more water within, over muddy bottom. There is no danger in this entrance, nor any directions necessary further than to haul to the eastward, as soon as you are within the island, and anchor off the entrance of the cove, or within it, as may suit your vessel. But approaching this harbour in a large vessel, there are two ledges with 15 feet least water to be avoided. They lie in the line from the south extreme of Cape Mecattina, to the western entrance of Mecattina Harbour. The north-eastermost of these ledges bears S. $\frac{1}{2}$ W. about 400 fathoms from the west end of Mutton Island, and the other N.E. by E., half a mile from the southermost Seal

Portage Bay.

Mutton Island.

*Portage Har-
bour.*

Two Ledges.

Seal Rocks.

Mecattina Seal Rocks. Rock, which lies near the shore on the east side of Cape Mecattina, and about $\frac{3}{4}$ of a mile, N.E. by N., from its south extremity.

Whale Fishery. Shoal water extends about a cable's length off the Seal Rocks to the eastward, but Mutton Island is quite bold. Portage and Mecattina Harbours are much frequented by schooners engaged in the whale fishery, and the scenery in both is strikingly beautiful.

Cape Mecattina. Cape Mecattina is a long and very remarkable promontory of the mainland, and of moderate height for some distance to the northward of its extremity; but about 3 miles to the northward it rises to the height of 685 feet above the sea. The highest part of what is called the High Land of Mecattina, which stands directly in rear of the harbour of the same name, cannot be less than 700 feet above the sea, and is the highest land upon this coast from Bradore westward to the vicinity of Mingan. The granite of this promontory is traversed, from S.W. to N. E., by those enormous basaltic dykes which I have mentioned as occurring in Great Island. They cut completely through the promontory into Portage Bay, ascending again on the eastern side of the latter, till they are lost to view beyond the summits of the hills.

Mecattina High Land.

*Entrance Island.
Dyke Island.*

In Dyke Island several of them are empty as low down as the surface of the sea; dividing the island by immense open fissures, in such a way as to distinguish it from all others in the neighbourhood. There is a small islet less than a cable's length from the end of the point with no channel between. At the distance of 180 fathoms further out is Entrance Island about two cables in diameter. Dyke Island is 200 fathoms further off in the same direction, and is composed of two islands at high water, but there is no passage, even for a boat between. It is about 800 fathoms long by 400 wide, and about 150 feet high above the sea. At the distance of 900 fathoms from the south point of Dyke

Outer Rocks.

Island, lie the two Outer Rocks. They are above water, and there are several rocks and ledges, and no safe passages, between them and the island. All these islands and rocks lie nearly in a line, S.S.E. $\frac{1}{2}$ E., from the south extreme of the promontory, from which the Outer Rocks are distant $2\frac{1}{2}$ miles. The northern

Murr Islets.

Murr Islet, which is the nearest of the two, bears S.E. by E. $\frac{1}{2}$ E., $2\frac{1}{2}$ miles from the Outer Rocks; and there is a clear and exceedingly deep channel between, the depth of water exceeding 80 fathoms. Vessels bound to Mecattina Harbour, either pass by this channel, or through between the islands; for there is a safe pas-

sage on either side of Entrance Island. The channel between Entrance and Dyke Islands is the best, and 13 fathoms deep. The shoal water extends about half a cable off the east side of the former of these islands, but the latter is quite bold.

78. The coast from Cape Mecattina to Cape Whittle was never before surveyed. It is as dangerous, as can well be imagined, to a stranger falling in with it at night, or in thick weather; and even to those who are perfectly acquainted with it, the navigation is not without much difficulty. Lying out of the way of the main lines of navigation through the Gulf, it is not often visited, except by fishermen, eggers, and a few Quebec trading schooners; but there have been instances of ships, after beating about the Gulf with adverse winds and bad weather, in the fall of the year, being wrecked upon it, as we were informed by the few solitary hunters and fishers who live there, and as was also clearly indicated by the quantity of wreck, almost everywhere to be found on the Islands. On these melancholy occasions, the vessels either beat to pieces on the rocks; or, being hove off them by the sea, sunk afterwards in deep water. No record remained of their fate; they were placed on the list of missing vessels. Such of their crews as escaped to the shore, perished miserably with cold and hunger on the barren islands, their remains having, in several instances, been found by the seal fishermen in the spring of the year. It is obvious that a correct chart may often prevent much of such misery, if it be only by pointing out the situations of those few Trading Posts, where alone assistance to support life during the long and severe winter can be found. But it will also inspire confidence in a vessel, suddenly finding herself entangled among the rocks, by showing that there are several good harbours, and almost everywhere places, where a vessel may be saved in time of need, although they would not be sought after under other circumstances.

The course and distance from Cape Mecattina to Cape Whittle is W. $\frac{1}{2}$ S., 55 miles; but this line passes 7 or 8 miles within the outer islands and rocks, so that it would be necessary to steer W. by S., from the Murr Rocks, to pass outside the St. Mary Rocks, which are the outer danger off the coast.

The depth of water immediately off, and even within the outer islands and rocks, is in general very great, often exceeding 70 or 80 fathoms, so that there is no warning by the lead; but in the

offing, at the distance of 4 or 5 leagues, there are occasional banks of sand and gravel, with from 30 to 50 fathoms of water. The outer islands are entirely bare of wood, but there are more trees on the mainland than in parts further to the N.E., indicating a slight improvement in the climate as we proceed to the S.W.

Little Mecattina Island.

Salaberry Bay.

Little Mecattina Island is comparatively a very large island, being nearly $7\frac{1}{2}$ miles long, in a N.N.E. direction, and about 3 wide. Salaberry Bay, on its west side, cuts it nearly in two parts. All outside the narrow isthmus, namely two-thirds of the Island, is high and remarkable land, which can be seen from a great distance out at sea, long after the other islands have disappeared below the horizon. The highest hill on the island is about 560 feet above the sea. The part of the island within the isthmus is a low and mossy swamp, resting on sand, with isolated ridges and mounds of granite piercing through it here and there. Within the island, to the north and west, are extensive flats of

Little Mecattina River.

Falls.

sand with boulder stones and small rocky islets. The Little Mecattina River discharges its waters through these flats, by several shallow channels, the largest of which flows into Aymer Sound to the westward; and the shallowest into the Bay of Rocks to the eastward of the island. The latter channel is only 3 feet deep at low water, so that it is possible to wade across it, and from the island to the main, when the tide is out. The River is large and falls 30 feet over granite a short distance within the entrance, and about $2\frac{1}{4}$ miles N.N.W. from the north end of the island. Little Mecattina Island, having thus no channel between it and the main for vessels, and scarcely even for boats at low water, may be considered as forming the west side of a large bay. The promontory of Mecattina forms the east side of this bay, which is filled with islands and rocks innumerable, among which no vessel could find her way, and where it is possible to lose oneself for a time in a boat, as we ourselves experienced.

Fin Rocks.

The outer point of these islands is formed by the Fin Rocks, lying 120 fathoms off Whale Head, the south extreme of the Gore Islands and bearing W.S.W. $\frac{1}{2}$ W. 10 miles from Cape Mecattina and E. $\frac{1}{2}$ N., $5\frac{1}{2}$ miles from Point Antrobus, a small peninsula at the S.E. extreme of Little Mecattina Island. To the westward of the Fin Rocks, at the distance of 2 and 3 miles respectively, lie the Herriot Isles, and the Single Rock, with two or three sunken rocks close to it. Between these and Little Mecattina Island there

*Herriot Isles.
Single Rock.*

is a large open bay, the head of which is called the Bay of Rocks. *Bay of Rocks.* Point Antrobus is the S.W. point of this bay, and has a ledge off *Point Antrobus.* it, a cable's length to the southward, which is the only danger off the south side of Little Mecattina Island.

Little Mecattina Cove is about 800 fathoms to the N.N.E. of *Little Mecattina Cove.* Point Antrobus, 650 fathoms long, and from 70 to 140 fathoms wide; between high, bold, and precipitous rocks. It is 10 fathoms deep in the entrance, and there are 17 fathoms over mud bottom within. It is open to the E.N.E., but as the islands are only distant 3 miles in that direction, there is no doubt but that a vessel well moored would be perfectly safe in it; but it is too small, and has too great a depth of water, to be a favourite resort for vessels. The S.E. point of entrance is called Cove Point, and *Cove Point.* is quite bold. Water may be had at the head of the Cove.

Hare Harbour, also on the east side of Little Mecattina Island, *Hare Harbour,* has depth and room enough for the largest ships, but has several rocks and ledges in it, which render it difficult to strangers. Most of these dangers can be seen, and they are all distinctly shown in our chart; with the assistance of which any vessel might enter this secure harbour, if she had a leading wind and fine weather. As it opens to the southward, the prevailing westerly or easterly winds are favourable for sailing in, and are generally accompanied with a smooth sea in the entrance. It is only when the wind is well to the southward, that there is any swell, and even then it never rolls into the harbour so as to affect a vessel.

To enter Hare Harbour with a westerly wind observe the follow- *with a Westerly Wind.* ing directions. Steer N.N.E. $\frac{1}{2}$ E., so as to pass Point Antrobus and Cove Point at the distance of $\frac{1}{2}$ of a mile, and you will see the Eden Islands ahead, bearing from Point Antrobus N.E. $\frac{1}{2}$ N. $2\frac{1}{2}$ *Eden Islands.* miles. When you have run $\frac{1}{4}$ of a mile past Cove Point, you will be close to the easternmost of the two Cat Rocks which are above water, *Cat Rocks.* about 200 fathoms apart, and bear east and west from one another. At the distance of 160 fathoms to the northward of the easternmost rock, lies Staff Islet, 70 or 80 fathoms in diameter; off which there *Staff Islet.* is a rocky patch dry at low water about 100 fathoms to the E.S.E.; *Patch.* this can always be seen from the rigging, but there is also a ledge, *Ledge.* with 2 fathoms least water, 160 fathoms E.N.E. from the N.E. extreme of the islet. On this ledge the S.E. extreme of the Eden Islands and the small and high Nob Islet are in one; the latter bearing from the former N.E. by E. $1\frac{1}{4}$ miles. These are the

Hare Harbour. only dangers on your left, or on the side of Little Mecattina Island ; and to the eastward, the nearest dangers will be more than a mile from your course. When you have run on your N.N.E. $\frac{1}{2}$ E. course, as before directed, 1 mile past Cove Point, Staff Islet will be abeam on your left, and ought not to be nearer than a $\frac{1}{4}$ of a mile. From this position you will see the entrance of the harbour bearing N. $\frac{3}{4}$ W. 1 mile. You cannot mistake it, because there is no other channel through which you can see clear into the harbour, from that position. The entrance, 170 fathoms wide and 20 fathoms deep, is between Daly and Price Islands ; and the only other channel is between the latter, and the Eden Islands, which have been already mentioned. You must take care not to take that channel by mistake, for you would hardly get safely in that way, because of the numerous ledges. *Daly Island.* Daly Island, forming the west side of the entrance, lies close to the shore, with only a boat channel between, through which you cannot see from outside.

But to continue the directions. Being abreast of Staff Islet, continue the N.N.E. $\frac{1}{2}$ E. course about 300 fathoms further, or till the entrance bears N.N.W., in order to clear the 2 fathom ledge before mentioned ; then haul directly in for the entrance, leaving the Eden Islands, and also Price Island, on your right hand, and giving the S.W. extreme of the latter a berth of not less than 30 fathoms. *Price Island.* Daly Island on your left, or to the westward, is quite bold. About 170 fathoms within the entrance on the east, or Price Island side, you will see the small Watch Rock above water, and further in, a very small islet. *Watch Rock.* This last is Bold Islet, about $\frac{1}{3}$ of a mile within the entrance, 80 fathoms W.N.W. from the inner end of Price Island, and quite bold. On the west side, bearing N. $\frac{1}{4}$ W. 200 fathoms from the east extreme of Daly Island, lies Safe Rock, very small, and above water, and is quite safe on its E. side. *Safe Rock.* Nearly midway between Safe Rock and *Rag Ledge.* Bold Islet lies Rag Ledge, which just dries at low water. This is the principal danger in the way, but it can almost always be seen from the rigging, and there is a clear channel on either side of it, a long cable wide and from 12 to 15 fathoms deep. The western channel however is the best ; and the course from the centre of the entrance to it, so as to pass within half a cable of the Watch Rock, is N. $\frac{1}{2}$ W. $\frac{1}{3}$ of a mile. *Anchorage.* When within these dangers, you must choose your anchorage by the lead, for there are several patches of rock

with from 4 to 6 fathoms, although the bottom is in general of *Hare Harbour*. mud, with from 9 to 14 fathoms water. In doing this, however, there is one more danger to be avoided, Foul Rock, a 2 fathoms *Foul Rock*. patch bearing exactly north 600 fathoms from the S.W. point of Price Island; and E.N.E. $\frac{1}{2}$ E., 360 fathoms from the south side of the watering cove, which will be seen on the west side of the harbour. Until within this rock, therefore, you should keep more than half way over from the islands forming the east side of the harbour, towards its western shore. You may if you choose run in nearly half a mile further than this patch, and anchor to the eastward of Cluster Point, which consists of some *Cluster Point*, low small islets and rocks extending off the Little Mecattina shore; this position being the most secure in the harbour.

Being bound for Hare Harbour with an easterly wind, steer *with an Easterly wind*. west, so as to pass to the southward of the Fin Rocks at the distance of half a mile. Having run $2\frac{1}{4}$ miles upon the west course after the Fin Rocks were abeam, you will have Scale Rock, a 2 fathoms ledge 400 fathoms on your right, and also the Tail Rocks, off the Herriot Isles, at the distance of $\frac{3}{4}$ of a mile. When you have run 1 mile further on the same course, you will see Single Rock, *Single Rock*, small and just above water, $\frac{3}{4}$ of a mile on your starboard beam, providing there has been no tide or current. At any rate you will see the rock which has no other above water near it, being $\frac{3}{4}$ of a mile to the westward of the nearest of the rocks off the Herriot Isles; more than $1\frac{1}{4}$ miles east from Cove Point, and S.S.E. $1\frac{1}{2}$ miles from the Eden Islands. There is nothing in the way to the westward of the line from Single Rock to the Eden Islands, excepting the Cat Rocks above water, and Staff Islet, and its ledges, already described as lying close to the shore of Little Mecattina Island. On the contrary, there is a fine open bay, with plenty of room for the largest ships to beat, and a depth in many places exceeding 50 fathoms. Single Rock however must *and its* not be approached nearer than a $\frac{1}{2}$ of a mile, because of three *Sunken Rocks*. sunken rocks around it at the distance of 150 fathoms, and with 1, 2, and 3 fathoms of water upon them. As soon as you have made out Single Rock, and have brought it abeam steering west, haul in to the north-westward by degrees, so as to place yourself half a mile to the westward of the rock, when the entrance of the harbour will bear N.N.W. with nothing in your way; and you may steer directly for it, and proceed as before directed.

Bay of Rocks. All the bay within, or north-eastward of the Eden Islands, as well as to the eastward of the line from them to Single Rock, is dangerous, being full of sunken rocks, and shoal rocky patches, springing up through great depths of water.

Good watering Place. There is a good watering place in the small cove on the west side of Hare Harbour, and wood may also be obtained in various places. There is usually a couple of men either in the entrance of Little Mecattina River, or near Little Mecattina Cove, during the summer months. They are employed in the salmon and

Mr. Robinson's seal Fisheries. seal fisheries for Mr. Robinson of Fish Harbour, but they do not remain during the winter. There are plenty of blue and cloud berries, &c. on the hills of Little Mecattina Island; and whoever may take the trouble to ascend them, will be rewarded with a fine and extensive view of very peculiar scenery. The eye wanders over myriads of islands, and far inland among the barren rocky hills. Steep precipices, deep glens, and dark stagnant ponds fringed with dwarf spruce, juniper, birch and poplar, are the nearer objects; and the whole conveys an idea of extreme barrenness. I am not sure that there is anything strictly beautiful in such a view, but it would seem that there is a degree of sublimity in the desolation of such scenery, which conveys very great gratification to the mind.

Cape Mackinnon. 79. The south shore of Little Mecattina Island, extending from Point Antrobus 3 miles W. by S. to Cape Mackinnon, the S.E. point of Aylmer Sound, is high and bold, with remarkable beaches of white boulder stones occasionally. There is a long cove close to the eastward of Cape Mackinnon, but it is of no use to vessels.

Aylmer Sound. Aylmer Sound is formed by Little Mecattina Island on the east, and the Harrington Islands, together with the mainland, on the west; and is navigable about 4 miles to the N.N.E. from Cape Mackinnon. The course and distance across this sound from

Cape Airey. Cape Mackinnon to Cape Airey, the south extreme of the Harrington Islands, is W. $\frac{1}{2}$ S. 5 miles; but further in, that is from Point Paynter to Craig Point, the breadth is only 2 miles, and

Point Paynter. so it continues as far as it is navigable. Point Paynter is formed of small islets close to the mainland, and the course and distance to it, along the east side of the Harrington Islands, is N.E. $\frac{1}{2}$ E. 4 miles.

Craig Point. Craig Point, the west point of Little Mecattina Island, bears S.E. by E. $\frac{1}{2}$ E. 2 miles from Point Paynter, and north 1 mile from Cape Mackinnon.

There is no danger on the west side of the Sound but what appears and is close to the shore; but on the east side there are two very small islets, the outermost of which is Aid Islet *Aid Islet* bearing N.W. $\frac{1}{4}$ N. 900 fathoms from Cape Mackinnon, and being 400 fathoms off shore. The other, Close Islet, lies about half way between the cape and Aid Islet, and about a cable's length off shore. The Spray Reef, small, awash at low water, and bold all round, lies W.N.W. $\frac{1}{4}$ W., $1\frac{1}{2}$ miles from Cape Mackinnon; and W.S.W. $\frac{1}{4}$ W., 1 mile from Aid Islet. This is the only danger in the entrance of the sound that cannot always be seen; and I recommend vessels to pass to the westward of it, because we have not sounded between it and Aid Islet, where, however, I have no doubt that there is plenty of water, as there is also between the islet and the shore to the eastward.

The Doyle Islands are four in number, but they appear *Doyle Islands*. from sea as two only. The two north-westernmost islands are very low, and close together, being joined at low water. The two south-easternmost islands are of moderate height, and also close together. Their east point bears N.N.E. 2 miles from Craig Point. There are several small rocks and ledges in the channel between these islands, and also between them and Crescent *Crescent Point*. Point to the N.W. of them; so that the only safe passage is to the eastward of the islands, and between them and the ledges which lie across the mouth of Salaberry Bay. This passage is half a mile wide, and from 18 to 23 fathoms deep, the east side of the islands being quite bold.

From the N.E. point of the eastern Doyle Island, to Boot *Boot Point*. Point (the south point of entrance of Louisa Harbour), the course is N.E. 600 fathoms. Within or to the N.E. of the Doyle Islands, between them and Louisa Harbour, there is a fine roomy roadstead, called Lou Road, in which vessels may choose their *Lou Road*. anchorage in from 12 to 4 fathoms over muddy bottom; the soundings decreasing gradually to the N.W., from the line joining the eastern Doyle Island and Boot Point, over to Crescent Point, a distance of about a mile. This roadstead is bounded to the northward by banks of sand and stones dry at low water, which extend across from the Dickson Islands, forming the N.W. side *Dickson Islands*. of Louisa Harbour, to Crescent Point. It is through these banks *Little Mecattina River*. that the Little Mecattina River discharges most of its waters, as mentioned in the last article.

Louisa Harbour, the situation of which has been pointed out, is *Louisa Harbour*.

Louisa Harbour.

about 200 fathoms wide at entrance. Within, the space in which vessels can ride in from 3 to 5 fathoms muddy bottom, is a third of a mile north and south, by a quarter of a mile east and west. The harbour is open to the W.S.W., but all sea is broken off by the Doyle Islands. The points of entrance are quite bold, and the best anchorage is 150 fathoms within them, in 4 fathoms, and in the southern part of the harbour.

Lou Road.

The only directions for sailing into this harbour, or into Lou Road between it and the Doyle Islands, are to keep the eastern side of the latter aboard, to avoid the ledges lying across the entrance of Salaberry Bay, as already mentioned. When once inside of the island there is nothing in the way, so that a vessel may either anchor in the roadstead or run into the harbour as she pleases. In the sound outside of the Doyle Islands, the only thing

Spray Reef.

to be guarded against is the Spray Reef. There are irregular soundings with as little as 11 fathoms over rocky bottom here and there, but in general the depth is from 19 to 23 fathoms with rock, sand, and mud bottom. The ground cannot be trusted until within the Doyle Islands.

Harrington Islands.

The Harrington Islands extend northward 4 miles, from Cape Airey to the mainland, there being no channel within them, because of the multitude of small rocks. The longest of those islands is about $1\frac{1}{2}$ miles long, and several of the others are nearly as large. They are high islands, the highest being estimated at 350 feet above the sea. Between the outer and largest islands there is indifferent anchorage and deep water; but the channels leading to it are narrow and too intricate for any directions to avail. In short it is a very dangerous place, and useless, excepting to small vessels intimately acquainted with the coast.

Black Reef.

The Black Reef lies off these islands, bearing from Cape Airey S. by W. $\frac{1}{2}$ W. 2 miles. It is composed of low black rocks above water, about 150 fathoms in diameter, bold, but with very irregular soundings around it, varying from 6 to 70 fathoms over rocky bottom.

*Major Reef.
Netagamu Islands.*

Major Reef, awash at low water, and very small, bears W. by N. $1\frac{1}{2}$ mile from Cape Airey, and the Netagamu Islands are $4\frac{1}{2}$ miles distant from the cape on the same line of bearing. These islands are small with a remarkable mound on the largest of them. Between them and the Harrington Islands there is a bay of the mainland with clay cliffs, and sandy beach at its head, and innumerable small rocks across its mouth.

Netagamu River bears N. by W., $1\frac{1}{4}$ miles from the islands of *Netagamu River*. the same name, and may be known by the sandy beach, backed with a thick growth of spruce trees, on either side of its entrance. It is a large stream with deep water in the narrow entrance, and also within close up to the falls, which descend perpendicularly 50 feet, on either side of an island, and into a basin half a mile wide. These falls, which are N.E. by E., $1\frac{1}{2}$ miles from the entrance, can be partly seen from the sea, when they bear N.E. by E. A semicircular bar of sand, dry at low water, with the exception of a narrow channel 3 feet deep, extends a mile out from the entrance, and is extremely dangerous to boats because of the heavy surf. The current in this river is rapid, and the bottom of the channel is rock; but small schooners may be secured on the eastern side, a mile within the entrance, where there are two huts, the temporary residence of salmon fishermen during the season. The hills of *Salmon Fishery*. the mainland, 4 or 5 miles to the westward of this river, are rather higher than is usual on this coast, rising to the estimated height of 400 or 500 feet above the sea.

80. The St. Mary Islands lie 7 miles off the mainland, and their east extreme bears from Cape Airey W.S.W. 10 miles. There are *St. Mary Islands*. two of those islands so close together, that they may be considered as one narrow island about 3 miles long, in a S.W. by W. $\frac{1}{2}$ W. direction. Their height is estimated at 200 feet above the sea, and they are of bare steep granite, and bold all round.

The Cliff Islands are $\frac{2}{3}$ of a mile to the N.W. from the N.W. point of the St. Mary Islands. There is a ledge which shows to the S.W. of them. The Cliff Islands are one round and steep island $\frac{1}{2}$ mile in diameter, with several small islets and rocks close to the west of it, and deep water between them all. Between these and the Boat Islands there is a safe channel half a mile wide. *Cliff Islands*.

The Boat Islands, a cluster of small islands close together, lie W. $\frac{1}{2}$ N., $2\frac{1}{2}$ miles from the west point of St. Mary Islands. The Boat Islands occupy a space of $1\frac{1}{4}$ miles in a W.S.W. direction by about $\frac{1}{2}$ of a mile wide. *Boat Islands*.

The Middle Islands are a chain of islands, nearly joined at low water, with several small islets adjacent. The westernmost island is $2\frac{1}{4}$ miles long and 150 feet high. The whole group covers a space of $3\frac{1}{2}$ miles in a W. by S. direction, by about 1 mile wide. There is a good anchorage in 10 or 12 fathoms between the westernmost island, and two smaller islands to the northward of it; but *Middle Islands*.

Middle Islands. it is too small for large vessels and too intricate for description, and can only be approached from the eastward. The Middle Islands lie $1\frac{1}{4}$ miles from the main, and there is no safe channel between, in consequence of the numerous islets and rocks. Be-

Safe Channel. tween the Middle Islands and Boat Islands there is a safe channel, more than a mile wide. In all these channels the soundings are irregular, and the ground foul. In some places there are only 15, whilst in others there are 40 or 50 fathoms of water.

Tender Reef. The Tender Reef is small and awash at low water. It bears N. by W. $\frac{1}{4}$ W., nearly a mile from the northermost St. Mary Rock, and W.S.W. $\frac{1}{2}$ W. $1\frac{1}{4}$ miles from the S.W. extreme of the Boat Islands.

St. Mary Reef's. The St. Mary Reefs, the most dangerous off the coast, are four ledges just under water, on some of which the sea always breaks. From the northern to the southern ledge the distance is a mile, and the latter bears S.W. $\frac{1}{4}$ S., $3\frac{1}{2}$ miles from the S.W. extreme of the Boat Islands, W.S.W. $\frac{1}{4}$ W., 6 miles from the S.W. extreme of the St. Mary Islands; and S.E. $\frac{1}{2}$ S., $3\frac{1}{2}$ miles from the west-

Southwest Islands. ermost of the Southwest Islands, which are a group of very small islets, of which the westernmost is high and round. There is a patch

Rocky Patches. of 12 fathoms 2 miles out to the southward of the St. Mary Reefs, and another of 8 fathoms, nearly as far to the westward of them.

There are irregular soundings and deep water around and between all these rocks and islets, but no warning by the hand-lead. There is a clear channel between the Tender Reef and the S.W. Islands, and also between the St. Mary Reefs and the Boat Islands; at least there is nothing with so little water as 3 fathoms, since the sea often breaks in that depth, and we must have seen it.

Watagheistic Island and Sound. Watagheistic is a large and hilly island 3 miles long by more than $1\frac{1}{4}$ miles wide. It is much broken into coves, and lies in the mouth of a large bay, so as to form a large sound within it, in which there are several good anchoring places. The eastern entrance between the island and the main is narrow and intricate, but the western entrance is half a mile wide; and although there are several rocks and ledges in it, yet it may be safely sailed through, with proper care and the assistance of our charts, in the largest vessels. The east end of Watagheistic Island bears due north, $6\frac{1}{4}$ miles from the Cliff Islands; but there are many islets, rocks and reefs between, which it would be tedious and useless to enumerate, so that it will be sufficient to remark that Cove

Cove Island.

Island, which is the largest of them, is half a mile in diameter, and surrounded with rocks and ledges. It bears N.N.W. 4 miles from the north point of St. Mary Islands, and there are thickly scattered rocks, both above and under water, all the way from it to the Neta-gamu Islands, $6\frac{1}{2}$ miles to the eastward. *Watagheistic Sound.*

If it were not that cases sometimes occur, in which a secure anchorage is indispensable to the safety of a vessel, I should not give any direction for Watagheistic, which cannot be got at without passing through 7 miles of dangerous navigation. I give the following brief directions with the caution that their use must be accompanied with a good look out from the rigging, for it is impossible to be certain that we have found every ledge in such a place, although we have reason to suppose that none have escaped our notice.

Being to the westward with a westerly wind, you may either pass between the Tender Reef and the S.W. islands, and further eastward between the Middle and Boat Islands, or you may run down outside of the St. Mary Rocks, and then haul in to the northward between the Boat and Cliff Islands, which is the safer route, and the one which I shall give directions for. Being then in mid channel between the Boat and Cliff Islands, steer N. by E. and that course will take you close to Bold Rock, bearing N. $\frac{1}{2}$ W. 2 miles from the western extreme of the Cliff Islands, and east $\frac{1}{4}$ a mile from the east point of the Middle Islands. The Centre Reef, which always shows, bears E.N.E. $\frac{1}{4}$ E. $1\frac{1}{4}$ miles from Bold Rock; and there is a clear channel between them, but not between the Bold Rock and Middle Islands. We will suppose that you pass to the eastward of the Bold Rock at the distance of 300 or 400 fathoms. As soon as you have past that rock, change your course to N. by W., and when you have run $1\frac{1}{4}$ miles, you will be in the line from the Cutter Reefs to those which extend to the S.W. from Cove Island, and rather nearer the former than the latter. The latter reefs bear from the former E. by N. 2 miles, and some parts of both can always be seen. Continue your N. by W. course, $1\frac{1}{4}$ miles further, and you will be midway between the Black Ledge and the Bare Rocks, the latter bearing from the former E.N.E. $\frac{1}{4}$ E., $1\frac{1}{4}$ miles. Do not go near the Ledge, which has not been sounded off. Change your course now to N.N.E. $\frac{1}{4}$ E., leaving all the islets to the north westward of Cove Island on your right, and when you have run $1\frac{3}{4}$ miles, you will see Beacon Islet (close to the S.E. extreme of Watagheistic Island, *Eastern Entrance.*
Bold Rock.
Centre Reef.
Cutter Reefs.
Black Ledge.
Bare Rocks.
Beacon Islet.

Watagheistic Sound.

and with a smaller islet a $\frac{1}{4}$ of a mile to the westward of it) a $\frac{1}{4}$ of a mile ahead. Run down to the N.E. by E., past this islet, sufficiently far to avoid a reef and 3 fathoms patch, which together extend 400 fathoms off it to the N.E. by E.; then haul in N.N.W., giving the islet a berth of a full half mile on your left, when you will be in 10 or 12 fathoms. When you have run half a mile from the time Beacon Islet was abeam, you will observe a deep bay in the east side of Watagheistic Island. Steer for the narrow channel between the north point of this bay, and two small islets which lie 140 fathoms off it to the N.E. As soon as you arrive at these islets, you will see another deep cove in Watagheistic Island, with an islet nearly filling up its mouth. Leave this islet close on your left, and as soon as you have past it, steer N.W. $\frac{1}{4}$ W. for the channel between Watagheistic Island, and the islands to the eastward, which extend across to the mainland in that direction, with the exception of a very narrow 3 fathoms channel. Keep in the middle of the channel, inclining towards the west or the Watagheistic side. The channel is at first only 80 or 90 fathoms wide, but it soon expands to 160 fathoms, with a depth of 15 fathoms in the middle over mud bottom, where you may anchor in perfect security. After you have past the reef off Beacon Island, there is nothing in your way by this route, the Islands being quite bold. If you should determine upon running through into the Upper Sound, beware of a reef which lies across the mouth of the channel at the distance of 150 fathoms, as will be seen in the chart. As there is no safe channel to the eastward of Cove Island, you cannot approach this anchorage with an easterly wind, without first beating up along the south side of Watagheistic Island, after you have past between the Bare Rocks and Black Ledge, so that in that case the western entrance to Watagheistic Sound is to be preferred.

Western Entrance.

With an easterly wind you may either sail in from sea through the same channel as before, or to the eastward of the St. Mary Islands, which is quite safe. Being to the eastward, steer for the N.E. point of St. Mary Islands, which you may pass at the distance of two cables, and then bringing it astern, steer from it N.W. by W. $\frac{1}{4}$ W., and the Centre Reef, which you must look out for, will be abeam at the distance of about a quarter of a mile on your right, when you have run $2\frac{1}{4}$ miles from the N.E. point of the St. Mary Islands; from which the reef bears N.W. by W. $2\frac{1}{4}$ miles.

Centre Reef.

The reef is bold all round, and you may pass on either side at the distance of 2 cables, but I prefer passing to the southward of it. Continue the N.W. by W. $\frac{1}{2}$ W. course for 1 mile past the reef, then haul up N. by W. $\frac{1}{2}$ W., and when you have run $2\frac{1}{4}$ miles you will be midway between the Bare Rocks and Black Ledge as before; run on the same course three quarters of a mile further, and the Seal Islands, forming the north point of Boussier Bay (full of islands), will bear west two thirds of a mile. The channel to the westward between Watagheistic Island and the mainland will now be open, and you will see two small islets, nearly in its centre, in one, bearing W.N.W. $\frac{1}{2}$ W. The nearest of these islets will be distant from you about $1\frac{1}{4}$ miles; they are a quarter of a mile from each other, and quite bold; but you must take notice, that exactly in the line from the one islet to the other, and 350 fathoms E.S.E. $\frac{1}{2}$ E., from the eastmost of them, lies the Kettle Rock, very small, and just covered at low water. This rock lies exactly in a line from the Seal Islands to the point of a shoal cove of Watagheistic Island, which is open to the eastward. There is a rock awash 80 fathoms off the point of this cove to the southward. The channels on either side of the Kettle Rock, which is quite bold, are each a quarter of a mile wide, and from 20 to 26 fathoms deep. Having brought the islets in one, you have only to avoid the Kettle Rock, running in W.N.W. $\frac{1}{2}$ W. on either side of it, and the two islets to the westward of it, and then hauling up to the northward under the west end of Watagheistic Island, where you may anchor in from 17 to 20 fathoms over mud bottom, with plenty of room, no dangers anywhere near you, and well sheltered from all winds.

From both the anchorages for which I have given directions, a vessel with our charts may easily sail into the Upper Sound to the northward of Watagheistic Island, which is navigable throughout for the largest ships, with a convenient depth of water, and good ground for anchoring. Wood and water may be had there in plenty, and in Hamelle Bay, at the eastern extremity of the sound, a hunter and salmon fisher resides; and there is another in Boussier Bay, which I have mentioned as lying to the westward on the way to the western entrance into the sound.

There is no good anchorage on the route to, or outside either entrance to Watagheistic, the soundings being irregular with deep water, and generally foul ground. The breakers on every side, on

Watagheistic Sound.

Seal Islands. Boussier Bay.

Kettle Rock.

Hamelle Bay.

Salmon Fishery.

No outer anchorage.

so many rocks and ledges, make the place look much more dangerous than it really is.

*From Middle
Islands to
Wapitagan.*

81. Between the Middle Islands and Wapitagan, the mainland is broken into coves, and lined with islets and rocks innumerable, among which nothing but a very small vessel, perfectly acquainted with the coast, could find her way. There is nothing there worthy of notice, excepting the rapid Etamamu River, which enters a bay open to the S.W., full of islets and rocks, and 4 miles N.E. from the eastern entrance of Wapitagan. At the mouth of this river, there is a trading and salmon fishery post, at which two men reside all the year.

*Trading and
Salmon Post.*

*South Makers
Ledge.*

The South Makers Ledge is a small rock, which is never entirely covered when the sea is smooth. Its whole extent, above and under water, is 130 fathoms east and west, by 50 fathoms north and south, and there is no danger near it, excepting a patch of 4 fathoms, bearing from it S.E. by S., 200 fathoms. The soundings are very irregular round this ledge. There are 54 fathoms $\frac{1}{4}$ of a mile from it to the E., and nearly 60 fathoms 2 miles S. It bears west, 9 miles from St. Mary Rocks, and the soundings between are of all depths from 8 to 50 fathoms, rocky bottom. This dangerous ledge bears from Cape Whittle (the S.W. extreme of Lake Island) S.E. $\frac{1}{4}$ E., $6\frac{1}{2}$ miles; but the Cormorant Rocks lie directly between them, leaving a channel between those rocks and the Ledge, nearly $2\frac{1}{4}$ miles wide. The soundings in it are irregular, between 13 and 30 fathoms, but there is no danger excepting the claws of the Cormorant Rocks, one of which, with 4 fathoms, stretches 370 fathoms S. $\frac{1}{2}$ W. from Nest Rock; another E.N.E. from the Nest, and S.E. from Slime Rock, (the N.E. Cormorant,) $\frac{2}{3}$ of a mile from each, with only 2 fathoms; and a 2 fathoms patch which bears N.E. $\frac{1}{2}$ N. 250 fathoms distant from the Slime Rock. There is no channel between the Cormorant Rocks, or between them and Lake Island, excepting for small schooners whose crews know the position of every ledge.

*Cormorant
Rocks and
Channel.*

*Mistassini
Stone,*

Mistassini, or the great stone, is a remarkable block of granite lying on the S.E. extreme of the Outer Wapitagan Islands, which bears from the South Makers N. $\frac{1}{4}$ E. rather more than 3 miles. The block of granite, just mentioned, resembles a mortar, especially when seen from the S.W., and has been called the Gun by the fishermen. It serves as an excellent guide to the eastern entrance of Wapitagan, which is three quarters of a mile to the eastward of

or Gun.

*Eastern
Entrance of
Wapitagan.*

it, and N. by E., $3\frac{1}{4}$ miles from the South Makers Ledge. The *Wapitagus* Outer Islands of Wapitagus, which are of bare granite, about 70 or 80 feet high, are so close together, and so overlap, that they appear like one island. They completely shelter the harbour, which is a long and narrow channel running east and west between them and Wapitagus Island, which is next to the northward of them. The western entrance of the harbour is 2 miles to the westward from Mistassini, N.N.W. $\frac{1}{2}$ W., 4 miles from the South Makers; N. $\frac{1}{2}$ E. nearly a mile from Slime Rock, the north-eastermost Cormorant, and 3 miles E.S.E. $\frac{1}{2}$ E. from Cape Whittle. *and Harbour.* *Western Entrance.*

The south shore of Lake Island, between Cape Whittle and Cormorant Point, its S. E. extreme, is very remarkable; being quite straight in an E.S.E. $\frac{1}{2}$ E. direction, and composed of craggy cliffs of dark red granite, upwards of 100 feet in height, and stained white by the Cormorants. *Lake Island.* *Cormorant Point.*

The course and distance from Cormorant Point to the west extreme of the Outer Wapitagus Islands is E. $\frac{3}{4}$ S., 600 fathoms. There is a small islet nearly midway between these points, but within, or to the northward of the line joining them, this islet must be left on the left going into the harbour; the entrance being sharp round the western extreme of the Outer Wapitagus Islands. The western entrance of the harbour is about 80 fathoms wide, and there are parts of the channel, between islets within the eastern entrance, which are not more than 60 fathoms wide. The harbour is nowhere more than 140 fathoms wide, excepting where there are small bays; so that although the depth of water is more than sufficient for the largest ships, yet the navigation is so intricate, that this harbour is not fit for vessels of a greater burthen than 150 or 200 tons. *Wapitagus Harbour.* *Western Entrance.*

The position of the eastern entrance between the Outer Wapitagus Islands and others to the eastward has been pointed out, and, in approaching it from the southward with an easterly wind, there is nothing in the way. There is a rock and ledge which shows on the west side of the entrance. Keep, therefore, the east side on board, steering in N.W. by N. You will see three small islets a third of a mile within the entrance, and to the northward of them a Cove in Wapitagus Island running in to the westward round a steep rocky point, which has a small sunken rock close off it to the S.E. There is safe anchorage in $2\frac{1}{2}$ fathoms in this cove, but if you wish to run into the harbour, *Eastern Entrance from Southward.* *Cove.* *Safe Anchorage.*

*Wapitagun
Harbour,*

leave all three islets on your left, passing close to them; and then bear up to the westward between them and the steep rocky point of the cove just mentioned. This is the safer passage; the other, to the southward of all three islets, is only 30 fathoms wide, and has besides a ledge in the way, which can only be avoided by having a trusty person in the rigging, which, by the way, is necessary at all times, in entering this and similar harbours.

*with a West-
erly Wind.**Nest Rock.*

To enter Wapitagun Harbour with a westerly wind, attend to the following directions, remembering that a look out for the ledges, from the fore yard or the rigging, is absolutely necessary even with the best of charts. Run down between the Cormorant Rocks and South Makers Ledge, and then haul in north so as to pass the south-eastermost Cormorant Rock at the distance of about half a mile. This rock will be readily known from the Nest Rock, covered with birds, and stained white by them, being about 120 fathoms to the westward of it. N.E. from the S.E. Cormorant Rock and at the distance of 400 fathoms, the small ledge with 2 fathoms least water already mentioned, you must look out for, and leave on your left. There is another Patch, with the same depth of water, bearing E.N.E. $\frac{1}{2}$ E., three quarters of a mile from the former; but that will be out of your way, if you attend to these directions. After you have past the first of these ledges, you may haul to the westward a little, so as to leave the Slime Rock or N.E. Cormorant not less than 300 fathoms on your left, in order to avoid the other small ledge, with 2 fathoms least water, which bears from that rock N.E. $\frac{1}{2}$ N., and is distant from it a quarter of a mile. Having passed close to the eastward of this ledge, you may now steer directly for the islet in the channel, which you will see between the west extreme of the outer Wapitagun Islands, and Cormorant Point; but you must be careful not to haul up higher than N.N.W. $\frac{1}{2}$ W., in order that you may pass to the eastward of Long Ledge, which lies midway between the Slime Rock and Cormorant Point, and with the west end of the islet which you are steering for, on with the east end of Lake Island, which is a high point to the northward of the islet. There is a Patch 120 fathoms to the S.W. of that islet, but you may approach it as close as you please, if you do not bring any part of the islet to bear to the eastward of north. When you have arrived within the distance of two cables from it, you will see the harbour beginning to open to the eastward, and must instantly take in

your after sail, and bear up quickly for it, leaving the islet to the northward of you. Observe particularly that, before you bear up, you will have to pass a ledge on your right, which lies 140 fathoms south from the west point of the outer Wapitagun Islands. To avoid this ledge, you must not approach that point nearer than 200 fathoms, until it bears well to the eastward of north, but as soon as it does so, you may bear up for it, and round it into the harbour as close as you like. When once within the entrances, the rocks are bold and the water smooth; and you may choose your anchorage where you please, and will find in general from 16 to 20 fathoms water. The best berth however is in a small bay on the south side of the harbour, 600 fathoms within the western entrance, in 7 fathoms. The bottom within the harbour is everywhere of mud, but outside it is all rocky, with very irregular soundings.

*Wapitagun
Harbour.*

Anchorage.

The flood from the eastward and ebb from the westward usually run past the entrances of Wapitagun, at a rate varying from a $\frac{1}{4}$ to 1 mile; but both the streams are much influenced by the winds.

Tides.

There is water to be had on Lake and Wapitagun Islands; but for wood you must go through the islands to the mainland, distant from the harbour about 3 miles to the northward.

*Water.
Wood.*

I have no doubt, that to enter this and several other harbours, described in this chapter, will be considered a difficult and dangerous affair, and so in truth we found it without either chart, directions, or pilot; but if these directions be read carefully over, before attempting the entrances, with the charts of the harbours in hand, they will be readily understood, and little difficulty will be experienced beyond that which may be overcome by a smart and seamanlike management of the vessel, placed under proper and reduced sail for the purpose, with a leading wind and fine weather.

CHAPTER IX.

THE COAST OF LABRADOR FROM CAPE ST. LEWIS TO GRAND POINT,
INCLUDING THE STRAIT OF BELLEISLE.

82. General description of the coast from Cape St. Lewis to Grand Point; and St. Lewis Sound. Fox Harbour. Open Bay. St. Lewis Inlet. River Islands. Fall Harbour. Cutter Harbour, and Isthmus Bay. Club Cape. Middle Rocks. Middle Channel. Middle Harbour, Caribou Channel, &c. Battle Islands. Ribb Reefs. Battle Harbour.—83. Cape St. Charles. St. Charles Harbour. St. Charles Channel and River. Niger Sound. Camp Islands. Table Head. St. Peter Islands and Bay.—84. Chateau and Temple Bays; Henley, Antelope and Pitts Harbours. York Point.—85. Belleisle. The Strait of Belleisle. General remarks; soundings, tides, and currents.—86. Wreck Bay. Barge Bay. Green Bay. Red Bay. Carrol Cove. Black Bay. Loup Bay. Forteau Bay. St. Clair Bay. Blanc Sablon. Grand Point. Wood, and Greenly Islands.

THE coast which will form the subject of the first part of this chapter is not comprized within the title of these Directions, being without the Gulf of St. Lawrence; but as it has been included in our survey, is little known, and possesses harbours which may occasionally prove of use to vessels, I shall give a brief description of it here.

82. From Cape St. Lewis to York Point, a distance of nearly 30 miles in a S.W. direction, the coast is composed of bare granitic hills, which, excepting in the vicinity of Chateau Bay, do not exceed 700 feet in height above the sea; but appear much higher because they usually rise abruptly from the sea. Several of the bays and inlets are large, with bold shores and very deep water. Neither the islands nor the dangers of this coast are so numerous as to render the navigation intricate or difficult, so that if it were not for the frequent fogs, the heavy easterly swell rolled in from the Atlantic, and the icebergs, which are almost always drifting along it with the current from the northward, it might be considered a safe coast for vessels. There are no permanent inhabitants, but the cod fishery is carried on extensively by the people of Newfoundland, who bring their families for the season, and have huts and stages at almost every bay, cove, and

Cod Fishery.

harbour. The principal fishing stations are at Battle and St. Charles Harbours. The fishery is carried on in small brigs and schooners, generally of from 30 to 100 tons, and in boats. The vessels return to Newfoundland, and only a very few persons are left, who winter up the bays of the main, to hunt for furs, and to be ready for the seal fishery at the breaking up of the ice in spring. The boats are hauled up on the rocks, or taken into coves of the main, where they are covered over with spruce branches, and are thus secured from the ice.

The climate on this coast is extremely severe, the mean temperature of the year being certainly below the freezing point. On our arrival at Chateau Bay on the 25th of July, we found the earliest plants just springing up, and the grass only just beginning to give a shade of green in the sheltered spots between the hills. The temperature of the sea outside the bay was at 32° and the air at 43° of Fahrenheit in the warmest period of the day. The fishermen however reported that it is much more cold about Chateau Bay, and the north side of the Atlantic entrance of the strait of Belleisle, than it is further to the northward, and also that fogs are of more frequent occurrence. Our own experience, as far as it goes, confirms the truth of this statement. They say that we must go three or four degrees further north, to find it equally as cold as it is there. It would seem that this low temperature is common to the entrance of narrow straits, for we not only found the surface of the sea colder there than elsewhere in the neighbourhood, but also at Mingan, Point de Monts, and Bic: and the low temperature of the air obviously depended upon that of the sea; for when we proceeded only a very few miles up the bays, the increase of temperature was felt immediately.

ST. LEWIS SOUND, open to the eastward, is more than 4 miles wide at the entrance, between Cape St. Lewis and the North Battle Island: the island bearing from the south extremity of the Cape S. by W. $\frac{1}{2}$ W. The depth of the sound from its entrance to Telegraph Point, at the entrance of St. Lewis Inlet, is 8 miles in a N.W. by W. direction. Its northern shores are formed by the mainland; and the southern by the Battle, Great Caribou, and several other islands, for about 5 miles in, after which the mainland is on both sides. These shores are almost everywhere quite bold; and the water is everywhere extremely deep, often exceeding 50 or 60 fathoms. Nearly in the centre

of the sound are the Middle Rocks; and further in, the River Islands, which will be described immediately.

Cape St. Lewis. CAPE ST. LEWIS is of precipitous and dark red granitic hills, about 600 feet high. At its southern extremity there is a small rocky peninsula; and nearly a mile to the east of this lies St. Lewis Rock, small, low, black, and close to the shore.

Fox Harbour. FOX HARBOUR is $1\frac{1}{2}$ miles to the N.W. of the south extremity of Cape St. Lewis. It is a cove of the mainland running in nearly a mile to the E.N.E., and forming a perfectly secure anchorage in from 5 to 8 fathoms, over mud bottom. The entrance of this harbour is only about 100 fathoms wide, but the harbour is more than twice as wide within. Its east point is low, with several houses of the fishermen upon it: and there is a small rock above water close off it to the northward, and joined to it by shoal water. No other directions are necessary than to sail in to the northward, close past the point on which the houses stand, and then, leaving an unsheltered bay running to the north on your left, haul round the rock above water to the eastward into the harbour. In order to pass in the deepest water, you should not leave the rock more than 50 or 60 fathoms on your right, for there is a reef partly above water off the S.W. extreme of the point which separates the harbour from the unsheltered bay to the westward of it, and forms the north side of the entrance. The best berth to anchor in is about 300 fathoms within the entrance. Water may be had from runs, and ponds, but wood is extremely scarce.

Deer Harbour. DEER HARBOUR is formed by Marnham Island, which is narrow, of considerable height, and about $1\frac{1}{2}$ miles long. The eastern entrance, between the east end of this island and the main, is narrow, and only fit for boats. The principal entrance, which is 5 miles N.W. of Cape St. Lewis, is between the west

Deer Point. end of the island and Deer Point, 400 fathoms wide, from 19 to 31 fathoms deep in the middle, and bold to the rocks on either side. The harbour to the northward of the island is 400 fathoms wide, extensive enough for any number of vessels, and perfectly landlocked; but the water is inconveniently deep, being generally from 16 to 26 fathoms, and over mud bottom. There are no dangers that cannot be seen either in the entrance or within this harbour, and there is room for the largest ships to beat in or out, so that no particular directions seem necessary. The course in

from the sound, between Deer Point and Marnham Island, is *Deer Harbour*, north; and then to the E.S.E. into the harbour between the island and the main; or to the N.W., up the cove in that direction, where there is also secure anchorage in a more convenient depth of water than in the harbour, but with less room for large vessels. Water may be had from small runs of water, or ponds of rain water, in various parts near the shores; and there are a few small trees up the N.W. cove, but fire-wood is scarce. The course and distance from the north Battle Island, to the entrance of Deer Harbour, is N. by W. $\frac{1}{2}$ W. 8 miles.

OPEN BAY is immediately to the S.W. of the entrance of Deer *Open Bay*. Harbour; Deer Point, which is the west point of entrance of the latter, being also the north point of entrance of the former. The south point of entrance of Open Bay is of green felspar, *Felspar Point*, bearing from Deer Point S. $\frac{1}{2}$ W., $1\frac{1}{2}$ miles; and having off it, at the distance of half a mile to the S.E. $\frac{1}{4}$ E., the Black Reef above *Black Reef*. water. Open Bay runs in $4\frac{1}{2}$ miles to the N.W., and is about half a mile wide, with deep water. There is good anchorage near its head; but, as it is completely open to the wind and sea from the S.E., it is not a safe place for vessels.

The entrance of the channel, leading to St. Lewis Inlet, is between the Black Reef already mentioned, and the Seal Isles, *Channel to St. Lewis Inlet*, which are the easternmost of the River Islands. This entrance is more than a mile wide, with very deep water, and the course and distance to it from Cape St. Lewis is W. by N. $3\frac{1}{2}$ miles; or, vessels bound to St. Lewis Inlet may take their departure from the north Battle Island, hereafter to be described. Steering from it N.N.W. $\frac{1}{2}$ W., a run of $2\frac{1}{2}$ miles will bring them to the North *North Middle Rocks*. Middle Rocks, which are two bare rocks close together, and about 40 feet high. Give these rocks a berth of two cables, or more, leaving them to the westward, or on your left, and then continue the same course, N.N.W. $\frac{1}{2}$ W., for 2 miles more, when the two Seal Isles (small and bare, with shoal water a short distance off *Seal Isles*. their east ends) will be about 400 fathoms on your left. Change course now to N.W. by W. $\frac{1}{2}$ W., and run in through the channel to the northward of the River Islands; and between them and the Black Reef, Felspar Point, &c. This channel is nearly $\frac{3}{4}$ of a mile wide in the narrowest part, and there is deep water, with nothing in the way, excepting two small islets, which will be readily seen, and may be safely passed to the southward at the

Telegraph Point.

distance of a cable. A run of $3\frac{1}{2}$ miles on the N.W. by W. $\frac{1}{2}$ W. course will place you abreast of Telegraph Point, which is the south point of entrance of the inlet, and the west side of the channel leading to the southward between the River Islands and the main.

St. Lewis Inlet.

ST. LEWIS INLET is nearly a mile wide at the entrance, and becomes wider within. There are bays with several small islands in them on the south side of the inlet, but no good anchorage, by reason of the great depth of water, and the exposure to the easterly winds, until we arrive at Black Fly Island, which is the first in the centre of the inlet. The course and distance from the entrance of the inlet to this island is N.W. $\frac{1}{2}$ N., 9 miles. The depth of water often exceeds 30 fathoms in the centre of the inlet, and is nearly 20 fathoms close to the shores on either side. The bottom is everywhere of mud, and there are no dangers in the way, excepting a small rocky shoal, 2 miles below the island; which, being always above water, will readily be seen, and must be left on the larboard hand in running up the inlet.

*Shoal.**Black Fly Island.*

Black Fly Island is about $\frac{1}{2}$ of a mile long, partially wooded, and surrounded with boulder stones, which extend from it 300 fathoms down the inlet, and also from the north point of the island across to the main, so as to leave only one navigable channel, which is to the S. westward of the island. There is good anchorage under the west side of this island, in from 5 to 9 fathoms, over a bottom of mud and stones; and wood and water may be had in abundance.

Navigation terminates at the mouth of the St. Lewis River.

The navigation becomes intricate immediately above this island, but it is nevertheless possible to take a ship, not drawing over 18 feet, $5\frac{1}{2}$ miles further up, where the navigation for vessels is terminated by a flat of sand and boulders, nearly dry at low water, and extending across the inlet off the mouth of the St. Lewis River. A mile below Black Fly Island, the inlet is only $\frac{1}{2}$ of a mile wide, and it contracts again to the same breadth immediately above the island. Further up it expands to more than a mile wide, and in this wide space, $1\frac{1}{2}$ miles above Black Fly Island, lies Wood Island, which is nearly a mile long by 300 fathoms broad. This island is also surrounded with boulder stones, leaving a very narrow 2 fathoms channel between it and the main to the S.W., but the channel to the north-eastward of the island is rather wider, and from 3 to 14 fathoms deep. This island is thickly

Wood Island.

wooded, and so are the shores on either side, with spruce and birch, which supply timber large enough for building schooners and boats. The trees increase in quantity and size from the entrance to the head of the inlet, where the climate is quite different from what it is on the coast, where the sea is often at the freezing point, and the temperature of the air not much higher at times, even in the warmest summer months. At the head of the inlet we found the weather inconveniently warm with westerly winds, and the mosquitoes and black flies innumerable. The Newfoundland people obtain the wood necessary for their stages, &c., from this inlet, and sometimes build their shallops and boats there. The scenery is beautiful, the granitic hills rising occasionally, on either side of the inlet, to the height of 700 or 800 feet above the sea. There are high clay cliffs at the mouth of St. Lewis River, at the head of the inlet. There was not water enough for our boats over the flats of sand and boulders at the entrance of this river, and we did not in consequence examine it. The water however was still quite salt off its mouth, so that it is probably but a small stream, as we were informed by the fishermen. There was a great salmon fishery on here only 3 or 4 years ago, but it is said to have completely failed.

St. Lewis Inlet.

Climate changes.

Timber.

St. Lewis River not examined.

Salmon Fishery.

The River Islands are a group consisting of Kalmia Island, Pocklington Island, and the Seal Isles. The former and westernmost is separated from Telegraph Point by a deep and clear channel 400 fathoms wide; and from Pocklington Island, to the eastward, by an unnavigable channel of the same breadth, but full of rocks above water. Both these islands are of bare granite, 150 feet in height, and they are each about 3 miles in circumference. Around, and off the east end of Pocklington Island, there are several small and bare islets, the two easternmost of which are the Seal Isles; and there is also a small sunken rock, on which the sea usually breaks, bearing S. by W. from the east end of Pocklington Islands, and at the distance of $\frac{1}{2}$ of a mile from its S.E. extreme. To the westward of the River Islands, and between them and the main, it is possible to anchor, but the depth of water is very great, exceeding 30 fathoms, over mud bottom, excepting very close to the islands; and, as a considerable swell often rolls in at times, the riding is insecure.

River Islands.

Kalmia Island.

Pocklington Island.

Sunk Rock.

FALL HARBOUR, at the head of a bay of the main one mile deep, *Fall Harbour.*

Fall Harbour. is on the south side of Telegraph Point, and west about $\frac{1}{4}$ of a mile from the west side of Kalmia Island. It is small, with 3 fathoms water, and only fit for small vessels. Farther out in this bay there is more room, and greater depth of water, but the riding is rendered unsafe by the easterly swell which rolls in at times round the islands.

Cutter Harbour.

CUTTER HARBOUR is another bay of the main $1\frac{1}{2}$ miles deep, with two small islets, and several rocks in it. Only 2 fathoms can be carried in between these islets and the south side of the bay. It is therefore only fit for small vessels. This bay is $1\frac{1}{4}$ miles to the south of Telegraph Point, and one mile west from the west end of Pocklington Island.

Isthmus Bay.

Isthmus Bay, about $1\frac{1}{2}$ miles to the southward of Cutter Harbour, is exposed to the easterly swell, and consequently of no use to vessels. From this bay the mainland extends to the eastward, forming a high point, called Club Cape, which has a reef off it 70 fathoms to the eastward, and bears S. $\frac{1}{2}$ W., $1\frac{1}{2}$ miles from the east end of Pocklington Island. There is no danger in the channel between this cape and Pocklington Island, excepting the sunken rock to the southward of the east end of that island, which has been already mentioned. Club Cape bears from the North Battle Island N.W. $\frac{1}{2}$ W., $4\frac{1}{2}$ miles; and the South Middle Rocks (one large rock, with three smaller ones near, and to the S.E. of it) lie in the same line of bearing $1\frac{1}{4}$ miles from Club Cape, $2\frac{1}{2}$ miles from the North Battle Island, nearly a mile S.W. from the North Middle Rocks, and a mile north from Surf Cape, the N.W. extreme of Great Caribou Island. There are clear channels on all sides of, and between the North and South Middle Rocks; but they should not be approached nearer than 2 cables by strangers, excepting in fine weather when shoals can be seen.

Muddle Island and Channel.

Between Club Cape and the Battle Islands, the south side of the sound is formed by large islands. Muddle Island is the most to the N.W. of these, and Muddle Channel, between it and the main to the northward, leads into St. Charles River. The entrance to this channel is $1\frac{1}{4}$ miles south from Club Cape, and the course and distance to it, from the north extreme of the North Battle Island, is W. N. W., $3\frac{1}{4}$ miles. Muddle Channel is 230 fathoms wide in the narrowest part, and is free from danger, excepting some rocks, which will be seen on the Muddle Island side, and which extend nearly 100 fathoms from the shore, both

at the N.E. and N.W. points of that island. The mainland side should therefore be kept on board, with a good look out, for the channel has not been very carefully examined. The course and distance through it, from the sound to the mouth of St. Charles River where there is roomy and perfectly landlocked anchorage, is W. by N., 1 mile. Surf Island and Size Island lie to the S.E. and S. respectively of Muddle Island, and between it and Great and Little Caribou.

Muddle Channel.

Surf and Size Islands.

Between the three first named of those islands is Muddle Harbour, half a mile long, by 180 fathoms wide: perfectly landlocked, and with from 4 to 12 fathoms water over mud bottom. There are huts, and stages for fishermen on its shores. This snug little harbour may be approached either from the eastward, or from St. Charles Channel; but the entrance on that side is very narrow, and only 3 fathoms deep. To enter it from St. Lewis Sound observe the following directions. Steer W.N.W. $\frac{1}{4}$ W., from the North Battle Island, and a run of 2 miles will take you to the Surf Cape, the N.W. extreme of Great Caribou. Haul round this bold headland to the S.W. as close as you please, and steer from it S.W. by W., a mile, when you will be in the Narrows of Caribou Channel, which are there only 200 fathoms wide, between the S.E. end of Surf Island, and the west extreme of Great Caribou. Change course now to the N.W., so as to pass between Surf Island, and Muddle Island, keeping at first nearer to the former than the latter, and afterwards in mid channel. A run of 600 fathoms on this course will place you in the entrance of the harbour, and you may haul in to the westward and anchor where you please. On arriving in the Narrows of Caribou Channel, should the wind be unfavourable for proceeding to Muddle Harbour, or, should you prefer it, you may haul round the west extreme of Great Caribou to the S.E., and anchor between it and Little Caribou Island in the mouth of Pond Bay on the west side of Great Caribou, where you will find 4 or 5 fathoms over sand bottom, and lie perfectly sheltered from all winds. Water may be had from ponds at this anchorage, but for fire-wood you must send up St. Charles River. There is an entrance to Caribou channel between Size Island and Little Caribou, but it has not been particularly examined; and the southern entrance to it, between Great and Little Caribou, is shoal, as not more than 2 fathoms can be carried through; so that both

Muddle Harbour.

Pond Bay.

Caribou Channel.

these channels leading in from St. Charles Channel are fit only for small vessels.

Battle Islands. THE BATTLE ISLANDS form the south point of St. Lewis Sound. The S.E. Battle Island is the easternmost land on this part of the coast, showing as the extreme both from the S.W. and N.E. Although named as one, it is composed of two high islands close together which lie by themselves, about a mile to the southward of the rest of the islands of the same name; and are about three quarters of a mile long, by less than half a mile wide. The North Battle Island will be readily known, not only from being the northernmost of these islands, but also from its being of high and black precipitous rocks unlike any of the rest. It is nearly round, and about a third of a mile in diameter. Several smaller islands included in the name Battle Islands lie between these two, and close off the east end of Great Caribou Island, the largest of them being called Signal Island

Ribb Reefs. THE RIBB REEFS are two ridges of rocks, each about 200 fathoms in diameter, on which the sea always breaks. They are about half a mile apart; and bear nearly north and south from each other. The southern reef bears N.E. $\frac{1}{4}$ E., three quarters of a mile from Middle Battle Island, and the other E., $1\frac{1}{2}$ miles, from North Battle Island. There are several other sunken rocks between the Ribbs and those islands, so that I recommend strangers not to attempt to run through, but to pass outside, or to the eastward of the Ribbs, on their way to and from the Sound.

Battle Harbour.

Fishing Station.

BATTLE HARBOUR, between the Battle Islands and the east end of Great Caribou, is only fit for small vessels, being about 30 fathoms wide in the entrance, 70 or 80 fathoms wide within, about half a mile long, and from 4 to 6 fathoms deep with mud bottom. It is generally crowded with the vessels and boats of the fishermen, which moor to the rocks on either side; and the shores are covered with their houses and stages. There is a good house and store on Signal Island, with a high flagstaff which can be readily seen at sea, and from which the island derives its name. The southern entrance is only fit for boats. Vessels must therefore approach from the northward, passing to the westward of the North Battle, and the other islands lying between it and Signal Island, and will be distinguished by the high flagstaff already mentioned. In running to the southward close past the North Battle Island, two small and round islets about 50 fathoms in

diameter will be seen, the southernmost of them being in the entrance of the harbour. These are all that are in the way running in, and they are quite bold, and may be closely passed on either side. They bear south from the west side of the North Battle Island, at the distance of 450 and 800 fathoms respectively. There are two coves, with huts and stages of the fishermen, in Great Caribou, just to the westward of Battle Harbour, but these cannot be mistaken for the latter after the description I have given. *Battle Harbour.*

Battle Harbour is said to be secure during the summer months ; but in the fall of the year, what is termed the undertow by the fishermen, namely a heavy ground swell, is said to roll in between the islands, damaging the vessels and fish stages, and consequently rendering the harbour unsafe. I certainly never, in any part of the world, saw a heavier sea than that which at times rolls in from the eastward into St. Lewis Sound, even as far up as the entrance of the inlet, round the River Islands, and up the bays of the main to the westward of them. I never saw anything more grand and wildly beautiful than this tremendous swell, which often comes in without wind, rolling slowly but irresistibly in from the sea, as if moved by some unseen power ; rearing itself up like a wall of water, as it approaches the craggy sides of the islands, moving on faster and faster as it nears the shores, until at last it bursts with fury over islets 30 feet high, or sends up sheets of foam and spray sparkling in the sun-beams 50 feet up the sides of the precipices. I can compare the roar of the surf in a calm night to nothing less than the falls of Niagara. This high and long rolling sea was, however, far less dangerous to our boats, and impeded them less, than the high short breaking sea of the gulf. It annoyed us by preventing us from landing, but in other respects was of use to us by discovering shoals : for when it was running, there was nothing with less than 4 fathoms upon it, which had not a breaker upon it. Boats should, however, be on their guard at such times, for on some of these shoals the sea does not break constantly, but only now and then, when the sea suddenly tops, and bursts in a sheet of foam, which would swamp any boat that might be over the spot at the time. *Secure only in Summer.*
Heavy Sea in St. Lewis Sound.

Great Caribou is the largest island on this part of the coast, being about 9 miles in circumference. Its S.E. side is broken into deep coves, open to seaward ; and there are several small islets and rocks along it, but only one that is sunken, called Foam Rock, *Great Caribou.*
Foam Rock.

which always shows when there is a sea running, and lies 130 fathoms outside of a small islet, the next S.W. of Middle Battle Island. This rock is the only danger in the channel between the S.E. Battle Island and the Great Caribou.

The course and distance from the Middle Battle Island is S.W. by W. $\frac{1}{4}$ W. $4\frac{1}{2}$ miles to

*Cape St.
Charles.*

83. CAPE ST. CHARLES, and it will be readily known by St. Charles Hill, which is round, and 654 feet above the sea, bears N.W. by W., 850 fathoms from the cape, and is the highest land on this part of the coast. Also by St. Charles Island, which is high, half a mile long, and lies off the cape a long mile to the S.E. by E. It has several large rocks close off its inner side, or towards the mainland, and Low Isle outside of it, 600 fathoms to the S.E. There is a clear and deep channel between these islands and the cape.

*St. Charles
Island.*

Low Isle.

*St. Charles
Harbour.*

ST. CHARLES HARBOUR is formed by three islands, which lie along the eastern side of Cape St. Charles. The space, in which vessels can anchor, is about 600 fathoms long, by 280 fathoms wide; and the depth of water from 5 to 12 fathoms over mud bottom. Some sea rolls in with a S.E. wind, on which account I do not consider it a very secure harbour for large vessels, except in the finest months of summer. Small vessels might be perfectly secured by making fast to the rocks between Fishflake Island and the main, in 9 or 10 feet water. There are houses and stages of the fishermen both on the islands and main. Fishflake Island is the S. eastermost island; and the western entrance to the harbour, between it and the main, is so shallow and narrow, as to be only fit for boats. Blackhill Island, the next to the N.W., will be readily distinguished, being high, black, and precipitous, unlike any other near. Between this island and Fishflake Island is the entrance to the harbour, 100 fathoms wide, and with deep water close to the shores on either side. The channel between Blackhill and Spare Island, which is the next to the N.W. and the only remaining island, is 200 fathoms wide, only 2 or 3 fathoms deep, and rendered intricate by rocks. The channel out of the harbour to the N.W., between Spare Island and the main, is narrow, shallow, and only fit for boats. To make and enter St. Charles Harbour, attend to the following remarks and directions. Fishflake Island lies close to the east side of Cape St. Charles, and extends further out to seaward, so as to appear like the S.E.

*Fishflake
Island.*

*Blackhill
Island.*

Spare Island.

extreme of that cape. The S.E. extreme of this island forms the *St. Charles Harbour*. S.W. point of entrance to St. Charles Channel, and bears E. by S. nearly $1\frac{1}{2}$ miles from the summit of St. Charles Hill, and N.W. $\frac{1}{2}$ N., 1 mile from the N.E. extreme of St. Charles Island. Run in for the N.E. side of Fishflake Island, so as to pass its S.E. extreme at the distance of about 150 fathoms, steering N.W. by W., and that course continued will take you through the entrance between Fishflake and Blackhill Islands, into the harbour. There is nothing in the way. Three small rocks above water will be seen close off the inner, or N.W. point of Fishflake, but they are quite bold, as are the shores on either side. The best anchorage is off the mouth of a small bay of the main, in which a wharf and flagstaff, at the principal fishing establishment, will be seen. The bearings and distances which I have given, together with the very remarkable Blackhill Island, will sufficiently point out the position of this harbour to strangers. It is very easy of access and egress: water may be obtained there from the mainland, and wood from St. Charles Bay. *Fishing Establishment.*

ST. CHARLES CHANNEL, between the mainland on the S.W., *St. Charles Channel.* and Great and Little Caribou, Size, and Muddle Islands on the N.E., is from $\frac{1}{2}$ to $\frac{3}{4}$ of a mile wide, with deep water (exceeding 40 fathoms in some places), and no detached shoals. The course and distance up the centre of this fine channel, from its entrance, to the Narrows, between White Bear Point and Size Island, is N.W. $\frac{1}{2}$ N. $3\frac{1}{4}$ miles. Immediately outside of the Narrows, on the mainland side, is White Bear Bay, running in $1\frac{1}{2}$ miles *White Bear Bay.* W.N.W., affording no shelter, and full of rocks. Just within the Narrows lies Otter Island, small, with rocks and shoal water extending 120 fathoms from its S.E. end. There is no channel for ships between it and the main: but to the eastward of it, that is, between it and Size Island, the channel is $\frac{1}{2}$ of a mile wide, and from 14 to 18 fathoms deep. A run of $\frac{1}{2}$ a mile on a north course will take a vessel through the narrows, into the channel between Muddle Island and the main, which is 600 fathoms wide, more than 20 fathoms deep, and free from all dangers, excepting those which extend 100 fathoms from the shore on either side of the bay between Size and Muddle Islands. The course through this channel to the mouth of St. Charles River is N.N.W. $1\frac{1}{2}$ miles, and a vessel may either run up that bay to the westward, or through Muddle Channel, eastward, into St. Lewis Sound. Throughout all this extensive and land-

locked space there is anchorage, but usually in depths exceeding 20 fathoms, over mud bottom.

St. Charles River.

ST. CHARLES RIVER runs east, and is nearly a mile broad; but about 2 miles from its mouth the channel becomes narrow and intricate, though navigable for ships for $1\frac{1}{2}$ miles further; above which point there are only 6 feet of water, in a narrow channel with many rocks. Wood and water may be had in plenty up this inlet.

Niger Sound.

NIGER SOUND runs in 6 miles to the N.W., with deep water, often exceeding 30 fathoms, and free from detached dangers. Its entrance is between Cape St. Charles and the Camp Islands: the S.E. extreme of the latter bearing S.W. $\frac{1}{2}$ W., $3\frac{1}{3}$ miles from the S.E. extreme of Fishflake Island.

Niger Island.

At the distance of $2\frac{1}{2}$ miles within this entrance will be seen Niger Island, high, about $2\frac{1}{2}$ miles in circumference, and nearer

Smooth Island.

to the northern than to the southern side of the sound. Smooth Island, very much smaller and lower, lies 300 fathoms to the southward of Niger Island, and has shoal water off it, a cable's length to the N.W. and north. The channel between these islands is unsafe, but to the northward and southward of both islands the channels are free from all danger. Good anchorage will be found in Horn Bay, at the head of the sound; and also in Islet Bay to the northward of Niger Island. Wood and water may be had in abundance. No directions are necessary, since there are no dangers, and the high and steep shores are everywhere quite bold. There are, here and there, rocks off the points, but they all show and are close to the shores.

*Horn Bay.
Islet Bay.*

Inner Camp Island.

INNER CAMP ISLAND (nearly round, about 300 feet high, and $\frac{1}{2}$ of a mile in diameter) lies close off the S.W. point of Niger Sound, so as to leave only a boat channel between, where there

Fishing Stages.

are fishing huts and stages; as there are also in a small cove of the main half a mile to the westward, where a small schooner may be secured.

Outer Camp Islands.

OUTER CAMP ISLANDS (nearly $1\frac{1}{2}$ miles long N.W. and S.E. and $\frac{3}{4}$ of a mile broad) are not quite so high, and are also of bare granite. They are several islands, close together, and there is a small cove on their west side, where small fishing schooners moor to the rocks, with very indifferent shelter from S.W. winds. There is excellent shelter for the boats of the fishermen, whose huts and stages will be seen on the shores. The channel between the Outer and Inner Camp Islands is 200

Fishing Stages.

fathoms wide, and free from danger. There are three small islets in *Camp Bay*, the bay next westward of these islands. Off the outermost of these islets there is a rock awash, 160 fathoms to the S. E. *Rock awash.*

The course and distance from the S.E. extreme of the Camp Islands to Table Head is S.W. by W. $\frac{1}{2}$ W. 5 miles: and to the eastermost of the St. Peter Islands S.W. by W. $6\frac{1}{2}$ miles.

TABLE HEAD is very remarkable, being an isolated mass of basaltic columns upon sandstone, (flat at top, and precipitous all round,) the summit of which is 200 feet above the sea. *Table Head.* Truck Island lies close to the east side of this point, affording no shelter; and *Truck Island.* White Mica Cove, 1 mile further to the N.E., is only fit for boats. *Mica Cove.*

THE ST. PETER ISLANDS are a scattered cluster of small and low islets, with many rocks above and under water between them. *St. Peter Islands.* They are clifly and black, being for the most part composed of basalt and amygdaloid. The eastermost of them have been called the Peterel Isles, because those birds breed upon them. *Peterel Isles.* The shoal water does not extend off any of these islands to seaward beyond the distance of 200 fathoms. The eastermost of them lies $1\frac{1}{2}$ miles to the southward, and the S. westermost islet of the St. Peter group 3 miles S.W. $\frac{1}{2}$ W. from Table Head.

ST. PETER BAY is within these islets to the N.N.W. and on the west side of Table Head. It is completely open to the S.E., but the islets and reefs break off most of the sea. Its S.W. point, namely, Point Peter, bears N. by W. $\frac{1}{2}$ W. 2 miles from the south-westermost St. Peter Island. The bay is 2 miles deep, in a N.N.W. direction, and there is anchorage $\frac{3}{4}$ of a mile from its head, in from 13 to 20 fathoms, sand bottom, but there is not over 6 or 7 fathoms in the entrance between Point Peter and the innermost islet. This entrance is $\frac{3}{4}$ of a mile wide, but has a 2 fathoms shoal in it, nearly 200 fathoms off to the westward of the islet; and there is also a reef off Point Peter, 160 fathoms to the S.E. *Shoal Reef.* The passage in between these dangers is about 400 fathoms wide, and must be approached from the southward, passing to the westward of all the St. Peter Islands, and giving them a berth of not less than $\frac{1}{4}$ of a mile. The anchorage in this bay is however very indifferent, although it may be useful in case of necessity. Both wood and water may be obtained there. The hills at the head of the bay are 700 feet high, and extend from in rear of Point Peter westward to Chateau Bay.

The course and distance from the south-westermost St. Peter

Sandwich Head.

Island to Chateau Point, the S.W. extreme of Castle Island, is W. $\frac{1}{2}$ S. $6\frac{1}{2}$ miles. Nearly half way between them is Sandwich Head, and Cove, the latter useful only to boats. Between Sandwich Point and Seal Point, the east point of Chateau Bay, is Bad Bay, which is rocky and dangerous, affording no shelter to vessels.

Castle Ledge.

Off the east end of Castle Island, at the distance of 150 fathoms to the southward, there is a 3 fathoms ledge, on which the sea often breaks, and that is the only danger outside the islands.

Chateau Bay.

84. CHATEAU BAY will be easily recognized from a vessel off the coast by its position with reference to the remarkable Table Head, and the St. Peter Islands; by the high land in rear of it; and by there being a straight and unbroken coast, free from islands, to the westward of it: but more especially by the two wall sided and flat topped hills, composed of basaltic columns, which cap the summits of Castle and Henley Islands, and are 200 feet in height above the sea. This bay has within it Henley, Antelope, and Pitts Harbours; the two last of which are perfectly secure, and fit for the largest ships. Castle and Henley Islands shelter these harbours from the southward and eastward; as do Whale Island and York Point from the southward and westward. Castle is the outermost island, and Chateau Point, its S.W. extreme, forms the extreme point of land on this part of the coast. There is a narrow channel between Castle and Henley Islands, and also between the latter and the main, leading into Henley and Antelope Harbours from the eastward; but they are only fit for small vessels. The main entrance to Chateau Bay is between Chateau and York Points, the latter bearing from the former W.N.W. $\frac{1}{2}$ W. $1\frac{1}{2}$ miles. Within this entrance, at the distance of $1\frac{1}{2}$ miles to the northward, lies Whale Island in the entrance of Temple Bay.

Main Entrance.

Whale Island.

Temple Bay.

Fishing Establishments.

Temple Pass.

TEMPLE BAY runs in between high granitic hills rather more than $4\frac{1}{2}$ miles in a N. by W. direction, with very deep water, and no good anchorage. Nevertheless small fishing vessels moor on the west side, just within Temple Pass, where, as also on the N.W. side of Whale Island, there are huts and stages of the fishermen. Temple Pass, the southern entrance to Temple Bay, is only 80 fathoms wide and 4 fathoms deep: it bears N.N.E. $\frac{1}{2}$ E., $1\frac{1}{2}$ miles from York Point. The other entrance, called Whale

Gut, is between Whale Island and the point of the main which *Whale Gut*. separates Pitts Harbour from Temple Bay: it is 200 fathoms wide, but shoals on either side contract the navigable channel to 100 yards, with a depth of 4 fathoms. With these remarks I shall dismiss Temple Bay, only adding that exactly half way *Chateau Bay*. between York Point and Temple Pass, and about half a cable to the eastward of the line from the one to the other, there is a *Ledge*. small ledge with 3 fathoms least water.

HENLEY HARBOUR is only fit for small vessels, and is frequented by the fishermen who have their huts and stages there. *Henley Harbour*. It is formed by Stage Island, which is low, and close to the westward of the basalt columns on Henley Island. *Stage Island*. Vessels may enter this harbour either from the eastward through the narrow channel between Castle and Henley Islands; or from the south-westward, along the inner or north-west side of Castle Island. This harbour is only about $\frac{1}{2}$ of a mile long by a cable's length wide. The depth of water is from 4 to 6 fathoms. Some swell rolls in with S.W. winds. The only navigable entrance to this harbour faces the south, in which direction are the basalt columns of Castle Island.

ANTELOPE HARBOUR is on the east side of the bay, to the northward of Henley Island, and between the latter and Barrier Point, which, with its reef, separates it from Pitts Harbour to the northward. *Antelope Harbour*. The passage leading into both these harbours is between Stage and Henley Islands to the eastward, and to the westward Whale and Flat Islands; the latter being very small and nearly joined to the former.

To run into Antelope Harbour observe the following remarks and directions: The shoal water extends off to the westward of Stage Island 150 fathoms; and off to the eastward of the S.E. extreme of Whale and Flat Islands 100 fathoms. Besides these, there are three small ledges to be avoided, *Three Ledges*. which are extremely dangerous to strangers unless the weather be clear, when they can be plainly seen from the rigging or fore yard of a ship. The First and outermost of these ledges (with *First*, 2 fathoms least water) lies exactly in the line from the west extreme of Chateau Point, to the east extreme of Whale Island: and with the south extreme of the Seal Islands seen through the narrow channel between Castle and Henley Islands bearing E. $\frac{1}{4}$ N. The Second ledge (with three fathoms least water) lies *Second*,

Antelope Har- in the line from the south extreme of Flat Island to the south
bour. extreme of the basalt columns on Henley Island, and is distant
Third. 160 fathoms from the east side of Flat Island. The Third ledge
has only 9 feet least water, and lies between the east extreme of
Whale Island, and Black Point, which is the N.W. extreme of
Henley Island.

Black Rock. THE BLACK ROCK lies off BLACK POINT at the distance of 50
fathoms, and is small and low, but always above water. There
is no passage for vessels between this rock and the Point; but
the channel to the westward of the rock, and between it and
the ledge last mentioned, is 120 fathoms wide, and from 6 to 9
fathoms deep. There is also a channel equally wide, and nearly
as deep, between the ledge and the shoal water off the east ex-
treme of Whale Island, but the former is the preferable channel,
because the Black Rock, being quite bold, serves as an excellent
guide to vessels.

Grenville Point. Now observe that GRENVILLE POINT, on the north side of
Antelope Harbour, and about $\frac{1}{3}$ of a mile to the S.E. of Barrier
Point, is of steep black rock, like BLACK POINT, and these two
points in one form the leading mark for running in. Being then
Leading Mark between Chateau and York Points, bring these points in one,
to clear the bearing N.N.E. $\frac{1}{4}$ E. Then run in upon that leading mark,
Ledges. looking out for the first ledge, which you will pass 50 fathoms on
your right, and about 600 fathoms within Chateau Point. Con-
tinue your course $\frac{1}{2}$ a mile further, when you will arrive between
Flat and Stage Islands, and will have just passed the second
ledge, off the east side of Flat Island, at the distance of 120
fathoms on your left. You will now easily see the BLACK ROCK,
and must haul a little to the northward, but not more than will
be sufficient to pass close to the westward of it, and then round
it to the eastward into the harbour. The best position to anchor
Anchorage. in is midway between Grenville Point and the northern shore of
Henley Island, where the harbour is 300 fathoms wide, and the
depth of water from 11 to 14 fathoms, over mud bottom. You
will then be in the line from Grenville Point to the basaltic
columns, and more than 200 fathoms distant from the small
island in the narrow channel out to the eastward, between
Henley Island and the main. A vessel should be well moored in
this harbour, for the gusts from the westward, through Whale
Gut, and also from the S.W., are at times very strong.

PITTS HARBOUR is very superior to Antelope Harbour, being *Pitts Harbour*. more roomy, and better sheltered. It is a full mile long, north and south, from the Barrier Reef to its head; and from $\frac{1}{4}$ to $\frac{3}{4}$ of a mile wide. The depth of water is 18 fathoms in the centre, decreasing gradually to 4 fathoms close to the shores on either side. The bottom is of mud.

Vessels intending to proceed to this harbour should proceed in, as before directed, as far as the Black Rock; only that they need not pass so close to the rock, but may safely go as much as 60 fathoms to the westward of it. As soon as the rock bears east, change course to N.W. by N., or keep the S.W. extreme of the basaltic columns of Henley Island open to the westward of Black Point, and you will clear the Barrier Reef, leaving it to the eastward. Continue to run on this course or leading mark until the east extreme of Whale Island, and the west extreme of Chateau Point, in Castle Island, come in one, bearing S. $\frac{3}{4}$ W. Then change course to N. $\frac{1}{4}$ E., or so as to run up the harbour with the last named leading marks on, and you will clear the shoal water extending 50 or 60 fathoms off Pitts Point, and may anchor where you please, this fine harbour being capacious enough for a large fleet, and perfectly sheltered from all winds. Water *Water and* may be had from a stream at the head of the harbour, and wood *Wood*. is also plentiful.

Under certain circumstances, such as scant westerly wind, it might be desirable to pass between the Third Ledge and Whale *Channel West of the Third Ledge.* Island, instead of between that ledge and the Black Rocks. In that case proceed as before until you arrive between Flat and Stage Islands, and are abreast of the Second Ledge: then change course to N. by W., taking care not to approach the east side of Whale Island nearer than 120 fathoms, or by the lead than 4 fathoms. But also be careful not to go too far off, to the eastward, for fear of the Third Ledge, the position of which has been pointed out. As soon, therefore, as the passage into Temple Bay, through Whale Gut, begins to open, haul to the westward until the leading marks (east extreme of Whale Island, and west extreme of Chateau Point, in Castle Island) come on, then run into the harbour on these marks as before.

The scenery in Chateau Bay is magnificent and beautiful. *High Hills.* Pitts Hill, on the west side of the harbour, is 586 feet above the sea, and there is another hill, the Beacon Hill, to the northward

of it 725 feet high : but the highest land is a ridge in rear of, or to the N.W. of York Point, the summit of which, called the High Beacon, is elevated 959 feet above the sea at high water.

York Point.

York Point is quite bold, and so is Chateau Point to the westward, but has shoal water 50 fathoms off it to the S.E.

In all the old charts which I have seen, Chateau Bay is represented nearly twice as large as it really is.

Belle-isle.

85. BELLE-ISLE lies off the coast which has formed the subject of this and the preceding articles, and directly off the Atlantic entrance of the strait of Belle-isle. We had no opportunity of surveying it, although we have laid down its Points in their true position by means of angles from the stations on the coast of Labrador. It is much frequented by our own and American fishermen, and the very brief remarks which I am able to give respecting it, are derived from their information, and our own observation from a distance. The island is about $9\frac{1}{2}$ miles long, in an E.N.E. direction, and $4\frac{1}{2}$ miles wide, including Lark Island close to its north side. Excepting a rock above water close off Lark Island, and the N.E. reef, about 2 miles N.E. of the island, also in part above water, there are no dangers around the island, the shores of which are bold and rocky. The island is composed of a range of bare granitic hills of the estimated height of 500 feet above the sea, and whose steep sides dip into the sea in every part, excepting at the N.E. end of the island, where two low points converge so as to form a small cove, which shelters very small fishing vessels during the finest months of summer. The only other place which affords any shelter is Lark Cove, or harbour, which is very small, and formed by Lark Island near the centre of the north side of the island. This harbour also affords shelter to small fishing vessels during the summer months. Neither of these coves are considered safe early in the spring, or late in autumn, because of the heavy swell which rolls into them from the eastward. There is a small rocky bank, with 5 fathoms least water, about $3\frac{1}{2}$ miles N. by E. from the N.E. end of Lark Island, but I have not seen it. Schooners anchor occasionally in fine weather close off various parts of the island, in from 20 to 30 fathoms, for the purpose of fishing.

Reef.

N.E. Cove.

Lark Cove.

Rocky Bank.

The S.W. extreme of Belle-isle bears S.E. $\frac{1}{4}$ S. 19 miles from York Point, and N.E. $\frac{1}{4}$ N. nearly 14 miles from Cape Bauld, in

Quirpon Island, at the N.E. extreme of Newfoundland. The *Belle-isle*. narrowest part of the channel between Belle-isle and the coast of Labrador is between Lark Island and the St. Peter Islands, which are distant from each other nearly 12 miles.

The breadth of the channels on either side of Belle-isle *Strait of Belle-isle*. has just been mentioned. The entrance of the strait of Belle-isle, between York Point and Cape Bauld, is 26 miles wide; the latter point bearing from the former S. by E. At Cape Norman, 18 miles to the westward of Cape Bauld, the opposite coast of Labrador is distant only 14 miles; but the narrowest part of the strait is at Point Amour, in Forteau Bay, where it is only 9½ miles wide. The western entrance of the strait, between Greenly Island and Point Ferolle, is nearly 21 miles wide; the Point bearing from the island S.S.W. The course and distance through the strait is S. 54°. W. true, or according to the mean variation, W. ½ S. 65 miles.

The soundings in the strait are so irregular that they afford very little assistance to a vessel at night, or during the fogs which so frequently prevail. In general the deepest water is on the Labrador side, as, for instance, from York Point to Red Bay, where however it is interrupted by the shallow water off Wreck Bay. It is also very deep on that side, from Black Bay to Forteau Bay inclusive; but the line of deep water is not direct, nor, I believe, continuous through the strait, and it is still more perplexing, that there is as deep water within 2 miles of the dangerous Flour Ledge on the Newfoundland side, opposite Forteau Bay, as in any part of the strait. The depth of water varies in different parts from between 60 and 70 to 20 fathoms, and the nature of the bottom is as various as the depths, being sometimes of rock, and at others of sand, broken shells, pieces of coral, or gravel. Fogs occur with all southerly and easterly winds, and they are frequent likewise with the S.W. wind; it is only when the wind is from between the north and west, that clear weather can be safely reckoned upon.

Near the shores on either side there is usually a regular alternation of flood and ebb in fine weather, but it is not constant. *Tides in the Strait.*

The flood comes from the northward along the coast of Labrador, and also from the S.E., from Cape Bauld to Cape Norman. The latter stream, I have reason to believe, is often turned off to the northward by Cape Norman, and the same thing takes place at Green Island, on the Newfoundland side towards

Tides and Currents in the Strait of Belle-isle.

Greenly Island on the opposite side of the strait. There is moreover, at times, a stream running from the S.W. for several days together, along the west coast of Newfoundland. This stream occasionally sets from Point Ferolle obliquely across the strait towards Forteau Bay. Sometimes, and especially with N.E. winds, the current runs directly in an opposite direction along the west coast of Newfoundland from Point Ferolle past Point Rich. In short, there is no constancy either in the rate or set of these streams, for the winds and the irregular tides modify the set and rate of the equally irregular currents, in a manner which it is extremely difficult, if not impossible, to calculate upon with any degree of certainty. The prevalent current from the northward comes from between Belle-isle and the coast of Labrador. It is often at the temperature of the *freezing point*, bringing many icebergs into the strait, and frequently carrying them through it many miles up the Gulf. (See Art. 12 and 13.) Some of these bergs ground in deep water, whilst others are continually changing their positions. They are much more numerous in some seasons than in others, as I have seen 200 bergs and large pieces of ice in the strait in the month of August in one year, whilst there were not above half a dozen to be seen in the same month of the following season.

I have observed this current from the northward and eastward assisted by a N.E. wind, running full 2 miles an hour, whilst at other times it was almost insensible. It is even reported that there is sometimes a current in the opposite direction, and I believe that this report of the fishermen is correct, especially during the ebb tide, and when S.W. winds prevail in the Gulf. At the same time that this current is running to the westward, there is at times a stream of warmer water running out to the eastward on the Newfoundland side, especially during the ebb tide.

Navigation of the Strait at Night.

From these remarks it will plainly appear that the navigation of this strait is attended with very great danger in dark or foggy nights, during which no vessel should attempt to run through; for I have found that, with all our experience, we could not be sure of the vessel's position within 10 miles under such circumstances. On the approach of a dark or foggy night, therefore, it would be prudent to anchor in some one of the bays on the north side of the strait, rather than to continue under way. A vessel bound in to the Gulf, and running with an easterly wind,

will however find no place fit for that purpose until she arrives at Black Bay, and that is not a very good anchorage, for Red Bay cannot be entered by a large vessel with an easterly wind. Loup Bay is the first good anchorage under such circumstances, and there the vessel would be so far advanced in her run through the strait that it would not be worth while to stop, since she might easily clear every thing in the remaining short distance. But with a S.W. wind, at the approach of night, and appearance of a fog, a vessel bound out through the strait to the eastward had better stand off and on under easy sail, tacking by her deep-sea lead from the Newfoundland side till morning, if she be not further to the eastward than Point Ferolle. If she be further advanced, she had better endeavour to make Forteau Bay before dark, and anchor there for the night. In light winds or calms, during dark nights or foggy weather, it is better to bring up with a stream anchor, anywhere in the strait, than to drive about with the tides, without knowing whither, but then a look out must be kept for drifting icebergs.

The Newfoundland side of the strait has not been surveyed by us, although it has been laid down by our observations for fixing the position of the principal points along it. I shall therefore only remark that, where I had an opportunity of examining it, as at Cape Norman, Green Island, and Point Ferolle, it appears to have been well delineated by Cook. It is a low coast of limestone, partially wooded with spruce trees, and having no good anchorages for large ships, unless it be in St. Margaret Bay: for the other harbours, such as Old Ferolle, St. Genevieve, &c., are too small, or too narrow and intricate in their entrances, for vessels to run for shelter to in bad weather. There are dangerous ledges off this side of the strait between Green Island and Ferolle, which render it desirable to avoid it at night or in thick weather. The opposite coast is much more free from danger, and besides has several good roadsteads. It is composed of steep granitic shores from York Point westward to Cape Diable, where sandstone commences and continues to Grand Point, at the western entrance of the strait; lying on the granite, and occasionally forming magnificent cliffs several hundred feet in height.

86. Proceeding westward from York Point, along the Labrador side of the strait, the coast is straight and bold to WRECK BAY, which has a small river at its head, affords no shelter, and bears W. $\frac{1}{2}$ S., $10\frac{1}{2}$ miles from York Point. Off the east point of this

Wreck Bay. bay, at the distance of $2\frac{1}{2}$ miles S. by W., lies a small patch of rocky ground with 5 fathoms least water. On it the basaltic columns of Henley and Castle Islands are just open to the southward of York Point; and Barge Point, the next extreme to the westward, bears W. by S., distant 6 miles. The bottom can be plainly seen on this patch in fine weather; there is a heavy swell upon it in easterly gales, and frequently a great rippling: icebergs often ground upon it.

Barge Bay. BARGE BAY, $4\frac{1}{2}$ miles to the westward of Wreck Bay, will be known by a water-fall at its head. It affords no anchorage. The south extremity of Barge Point, about a mile to the westward of the bay, bears W. $\frac{3}{4}$ S., $16\frac{1}{2}$ miles from York Point.

Greenish Bay. GREENISH BAY, about $5\frac{1}{2}$ miles W. by N. from Barge Bay, is about 2 miles wide at entrance, narrower within, and about 2 miles deep in a northerly direction. Small vessels occasionally anchor in it; but the ground is of sand, not very good for holding, and it is open to the wind and sea from the S.E. The west point of

Greenish Point. Greenish Bay is Greenish Point; and about $1\frac{1}{2}$ miles W. by S. from it lies Oil Islet, a small, low, and bare rock, about $\frac{1}{2}$ of a mile off shore, the south extreme of which bears W. $\frac{1}{4}$ N., $6\frac{1}{2}$ miles from Barge Point, the extreme of the land to the eastward.

Oil Islet.

Sunk Ledge. Nearly $1\frac{1}{2}$ miles to the westward of this islet, and with its south extreme and Barge Point in one, bearing E. $\frac{1}{2}$ S., lies the Sunk Ledge, a small patch of rocks, awash at low water, on which the sea usually breaks. These rocks bear S.E. $\frac{1}{4}$ E., about $\frac{6}{10}$ of a mile from Twin Island, which stands close to the east point of Red Bay.

Red Bay. RED BAY is a beautiful little harbour, perfectly sheltered from every wind. It is formed by Saddle Island, lying off the entrance of a bay of the main, and about $\frac{1}{2}$ of a mile N.W. by W. from the

Saddle Island. Twin Island. Saddle Island has a hill at each end, about 100 feet high, and is low in the middle. The hills of the main are close to the shore, and to the N.W. of the island are of reddish granite, nearly 500 feet in height above the sea. There are also high and partially wooded hills at the head of the bay, but the east point of the latter is of moderate height and bare of trees. To the westward of Saddle Island, at the distance of $\frac{3}{4}$ of a mile, is WEST BAY, $\frac{3}{4}$ of a mile deep, $\frac{1}{3}$ of a mile wide, and with tolerable anchorage in westerly winds, in 10 or 12 fathoms water, over sandy bottom; but it is exposed to easterly winds. The outer harbour of Red

West Bay.

Bay is between Saddle Island and Harbour Isle, at the entrance *Red Bay*. of the inner harbour; and the depth is from 6 to 9 fathoms, over *Outer Harbour*. mud bottom. The entrance of this harbour from the westward is about 100 fathoms wide, and the space to anchor in is 400 fathoms long, by 200 fathoms wide. Immediately to the N.E. of this anchorage is the entrance to the inner harbour, which is between Harbour *Inner Harbour*. Isle and the main to the eastward, and 100 fathoms wide; but shoal water on either side diminishes the deep water channel to about 50 fathoms in breadth. The depth that can be carried in is 7 fathoms. Within there is a capacious basin, nearly $\frac{3}{4}$ of a mile in diameter, 16 or 17 fathoms deep, over muddy bottom, and where any number of vessels might safely winter. Three small rivulets enter this basin, where water and wood may be obtained at high water; and there is also a stream at the head of West Bay.

Red Bay is easily entered with a leading wind, but nothing larger than a schooner of 150 tons can beat in or out. The dangers outside the harbour to be avoided are the Sunk Ledge, already mentioned, off the Twin Island; another small rocky shoal about 170 fathoms off the south side of Saddle Island; *South Shoal*. and a rock awash about 70 fathoms S. from Peninsula Point. *Rock awash*. Running for the harbour from the eastward, the first will be avoided *Sunk Ledge*. by keeping Greenish Point just open to the southward of the *Marks*. bare islet to the westward of it, till the west extreme of Saddle Island bears N.W. $\frac{1}{2}$ N. Then steer N.W. $\frac{1}{2}$ W. for the entrance of the bay between Saddle Island and the point of West Bay, taking care not to go nearer to the former than $\frac{1}{4}$ of a mile, or by the lead than 11 or 10 fathoms. As soon as the west end of Saddle Island bears N. by W., you may haul up for it, and round it to the eastward within 20 fathoms: but observe that, further in, that is, off the north point of the island, there is a reef running out 70 fathoms to the northward, or towards Harbour Island. The channel between this reef and the shoal of large stones connecting Harbour Isle with the mainland to the westward of it is only 100 fathoms wide. As soon as you are through this entrance, you may choose your anchorage, only observing that there is shoal water all along the inner side of Saddle Island, and to the distance of 70 fathoms. A vessel moored here will be perfectly secure from all winds; but if you wish to go into the inner harbour, there will be no difficulty in doing so with our chart, or if you first send a boat to look at the narrow entrance.

Red Bay.

In approaching Red Bay from the westward there is nothing in the way, excepting the rock off the Peninsula Point near West Bay, already mentioned; and which, being so close to the shore, may be easily avoided. There is no entrance, excepting for boats, to the eastward of Saddle Island.

Carrol Cove.

CARROL COVE, about $3\frac{1}{4}$ miles W. by S. from Red Bay, is very small, with its entrance to the eastward. A fishing vessel or two are occasionally secured in it, moored to the rocks; and there are huts and stages there.

Little St. Modest Isle.

LITTLE ST. MODEST is the name given to two small, low, and bare isles, a mile apart, and close to the shore at the eastern point of Black Bay. They afford no shelter to shipping, but have a dangerous rock off them, awash at low water, and bearing S.E. by S. $\frac{1}{4}$ a mile from the west extreme of the westernmost isle: and W. $\frac{1}{4}$ S. not quite a mile, from the south extreme of the easternmost isle. This rock must be carefully avoided in approaching Black Bay from the eastward.

St. Modest Isle.

The other, and principal, St. Modest is a small bare isle close to the west point of Black Bay. Within this isle fishing vessels moor to the rocks on either side, but it is useless to ships.

Black Bay.

BLACK BAY is 11 miles to the westward of Red Bay; it is 3 miles wide across the mouth, from one St. Modest to the other, and about 2 miles deep. There is tolerable anchorage in this bay in 10 fathoms, over sand bottom, but it is open to the S.E. winds, which send in a heavy swell. There is, moreover, a rocky shoal on its west side with 2 fathoms least water, bearing N.E. nearly one mile from St. Modest Isle; and south, about $\frac{1}{4}$ a mile from a small rocky peninsula in the N.W. part of the bay. There is a river at the head of Black Bay which boats can enter at high water; and there is a fine sandy beach to the westward of it, extending to the rocky peninsula just mentioned. The best anchorage is off the centre of this beach.

Sandstone succeeds the Granite.

The granite, which has formed the coast line from York Point, ceases to do so, at the west point of Black Bay, being succeeded by sandstone. The granite, however, is seen occasionally at the water's edge under the sandstone, at various points further westward.

*Diablo Bay.
Loup Bay.*

DIABLO BAY is a small open bay 3 or 4 miles to the westward of Black Bay; and LOUP BAY, which is 3 miles further, will readily be known by the magnificent cliffs of red sandstone at its east

point, which are 300 or 400 feet high, and extend 2 or 3 miles to the eastward of it. At the S.W. point of Loup Bay is Schooner Cove, open to the eastward, but where nevertheless fishing vessels ride in 7 fathoms during the summer months. There is a fishing establishment and several houses at this cove. Loup Bay is $1\frac{1}{2}$ miles wide, and $1\frac{1}{2}$ miles deep; running in to the northward between high table-lands of sandstone, highest on the eastern side, where it terminates in the cliffs before mentioned. These table-lands are covered with green moss and grass. There is a fine sandy beach, and a river, which small boats can enter at high water, at the head of the bay. Although this bay is quite open to the southward, yet vessels ride here at all times during the summer months, the ground being extremely good. The best anchorage is in the N.E. corner of the bay, in 10 fathoms, sand bottom, about $\frac{1}{4}$ of a mile off shore, and with the entrance of the river bearing N.E.

FORTEAU BAY is about 4 miles to the westward of Loup Bay, and separated from it by Point Amour, which is of moderate height, and shows as the extreme point of land from the eastward; and will be, moreover, known by a remarkable high rock, close off its S.W. extreme, forming the S.E. point of Forteau Bay. Point Forteau is the S.W. point of the bay, bearing from Point Amour W. $\frac{1}{4}$ N., about 4 miles, which is the breadth of the mouth of the bay.

Forteau Bay is $2\frac{1}{2}$ miles deep, running in to the north, between high and green table-lands of sandstone, and having a fine sandy beach at its head, with a considerable and rapid river of the same name, abounding with salmon, and which boats can enter at high water. There is a fine fall of water on the west side of the bay, $1\frac{1}{2}$ miles within Point Forteau, which will be readily seen by vessels, and serves, with the rock before mentioned, to point out the bay to strangers. This bay forms the best roadstead in the Strait; and the Jersey vessels employed in the fisheries ride there moored all through the summer. It is quite open to the southward, but the winds from that quarter are never strong, nor of long duration: and the opposite coast of Newfoundland is distant only 12 miles in that direction from the anchorage. The S.W. wind rolls in a heavy ground swell at times which causes vessels to roll considerably, but brings no strain upon the cables. Vessels may anchor any where in the head of the bay,

- Forteau Bay.* in from 10 to 13 fathoms over sandy bottom, which holds well; but the best anchorage is in the N.W. side of the bay, opposite the fishing establishments, $\frac{1}{2}$ of a mile off shore, and nearly $\frac{1}{2}$ a mile within a spit of rock, which extends about 120 fathoms off from the western shore, and must be avoided in going in, by not going nearer to the shore than $\frac{1}{2}$ of a mile, or than 10 fathoms, till it is past. The Jersey-men have large fishing establishments on the west side of this bay. There is also an establishment in the N.E. corner of the bay, and also at the entrance of the river.
- Jersey Fishing Establishments.*
- St. Clair Bay.* ST. CLAIR, four miles W.N.W. of Point Forteau, is a small bay, open to the southward, and affording no anchorage. There is a very small and low islet and reef, which together extend about $\frac{1}{2}$ of a mile to the S.W. from its east point.
- Blanc Sablon Bay.* BLANC SABLON is a bay of the main, 7 miles to the westward of Point Forteau, where the Jersey-men have a large fishing establishment, and where their vessels lie moored all through the summer, in from 6 to 8 fathoms, over sandy bottom. Wood and Greenly Islands afford some shelter to this roadstead; nevertheless it is quite exposed to the westerly winds, which send in a very heavy sea, and render it a wild and insecure anchorage; particularly in the fall of the year, when vessels have been driven from their moorings, and wrecked there in more than one instance.
- Fishing Establishment.* Blanc Sablon Bay is $1\frac{1}{2}$ miles wide, by a mile deep, and there is a projecting point in the centre of the bay, on which the principal buildings stand. There is a sandy beach on either side of this point, and in rear of it high table-lands of sandstone. Close to the east side of the projecting point just mentioned, a reef of rocks runs out 300 fathoms from the shore; and there is shoal water all round the bottom of the bay, to the distance of $\frac{1}{2}$ of a mile from the beach.
- Grand Point.* GRAND POINT (see Ar. 74) at the western entrance of the Strait of Belle-isle, and from which the land trends northward towards Bradore, is $2\frac{1}{2}$ miles to the westward of Blanc Sablon. There is a dangerous reef of rocks off Grand Point, 350 fathoms to the southward and westward; and rocks, above and under water, line the shore for $1\frac{1}{2}$ miles to the eastward of this reef, extending off shore to the distance of $\frac{1}{2}$ of a mile in some places. Half a mile to the eastward of the point, there is a small and narrow cove called the Gulch by the American fishermen, who frequent it. This cove is sheltered by rocks off its mouth, and has 9 feet
- Grand Reef.*
- Gulch Cove.*

water when the tide is out. The cove is formed by two low and smooth granite spits running out from under the sandstone, and appearing like sand spits from a distance. The cove is so narrow, that there is not room for even the smallest schooner to turn round in it, hence the vessels must be warped out stern foremost. They lie lashed together, and to the rocks on either side, as alongside a wharf.

WOOD ISLAND (of sandstone, much lower than the main, and covered with moss and coarse grass) lies directly opposite Blanc Sablon. Its north point is about $\frac{1}{2}$ a mile off shore, and the island is $1\frac{1}{2}$ miles long, north and south, and nearly a mile wide at its south end, which is the broadest. Its south point bears W. by N., nearly $7\frac{1}{4}$ miles from Point Forteau. There is a reef off the west side of this island to the distance of about $\frac{1}{2}$ of a mile, but the shoal water does not, in any other part, extend further than a cable's length.

GREENLY ISLAND (low, bare of trees, of sandstone, and nearly $\frac{1}{2}$ of a mile in diameter) lies $1\frac{1}{2}$ miles to the westward of Wood Island, and $1\frac{1}{2}$ miles S. by W. from Grand Point. There is a patch of rocks about 200 fathoms off its south point, and the shoal water extends about half that distance to the westward.

There is a clear channel between these islands, and also between them and the main. The fishermen occasionally anchor in 5 fathoms, off the mouth of the cove, on the east side of Greenly Island; but the sea rolls round the island with S.W. gales, and the ground is loose, and not to be trusted. Neither is the anchorage good under Wood Island, although vessels occasionally bring up off the fishing establishments on its east side.

The flood tide and current combined occasionally run very strong round the north point of Wood Island; and when this stream meets the heavy swell from the westward, it causes a very high sea dangerous to boats.

Wood Island was formerly covered with trees, but they have been all cut down by the fishermen, who now often go to Newfoundland for wood for their stages, &c. There are two large fishing establishments on Wood Island, which, together with that at Blanc Sablon, belong to Jersey merchants. They carry on the seal fishery, as well as the principal affair of cod fish. Herrings are also taken in their season. The fishing vessels arrive from home in the beginning of June, and are frequently for many days

*Wood Island,
Fishing Estab-
lishment.*

drifting about in the ice before they can get to their stations, sometimes in great peril, and sometimes wrecked. The last ships remain till October, when the ice begins to form again, and the snow-storms are extremely dangerous. Every one returns to Europe in the fall of the year, excepting a man or two at each post to take care of the buildings, and to be in readiness to take seals in the spring. They have numerous dogs, mostly of the Esquimaux breed, crossed with the Newfoundland dog; these draw their sledges with firewood, or when they go over to the main to hunt for bears, deer, foxes, martins, &c. The best idea I can give of the climate is by stating the fact that, in the year 1833, the channel between Wood Island and the main was frozen across again, after the winter ice had broken up, on the 28th of June. Packed ice remained till the middle of July, and numerous icebergs all the year.

PART THE SECOND.

CHAPTER X.

FROM GREEN ISLAND AND RED ISLET, TO THE TRAVERSE AND
COUDRES ISLAND.

87. General remarks.—88. Red Islet and Bank. White Islet and Reef. Hare Island. Brandy Pots. Hare Island South Reef. Hare Island Bank, and Middle Bank. Barrett Ledges, and Middle Shoal.—89. The South Shore below the Traverse, Green Island, and its western reef. Cacona. Percée Rocks. River Loup. Pilgrim Shoal. Pilgrim Islands. Bank of St. André. Kamourasca Islands. Cape Diabie. River Ouelle. Shoals of St. Anne. St. Anne Buoy. English Bank.—90. The South Channel, from Green Island to the Brandy Pots, and from the Brandy Pots to the Traverse.—91. The North Shore below Coudres Island. Point Vaches and Lark Point with their Reefs. Echafaud Islet, and Basque Road. Dogs, Salmon, and Eagle Capes. Murray Bay. Goose Cape and Cape Martin.—92. The North Channel, from Bergeron to Coudres Island.—93. Remarks on the tides in both channels.

87. THE estuary of the St. Lawrence has been considered to terminate, and the river to commence, at Green Island: not with any pretension to geographical accuracy of definition, but because the adoption of such a division, at a part where the navigable channel becomes divided, contracted, and difficult, naturally and conveniently separates the sailing directions into parts corresponding with that distinctive change in the nature of the navigation.

From Green Island upwards considered as Pilot-water.

Part the First of these Directions was intended to enable the intelligent seaman to navigate his vessel as high up the St. Lawrence as Green Island, without any other assistance than the charts published by the Admiralty. But Part the Second treats entirely of Pilot-water; for which reason, and because the Admiralty plans of the river are published on a sufficiently large scale to show distinctly the nature of the shores, islands, and dangers, it will not be necessary to enter quite so minutely into description as in Part the First, where the object aimed at was often to enable a stranger to recognize the land from sea, or to guide his vessel in places not generally known.

Part the Second commences at what may be considered the first difficult pass ascending the St. Lawrence—the difficulty

arising not only from the dangerous reefs of Green Island, Red Islet, and the Saguenay, but also from the great velocity and transverse direction of the tidal streams.

Some remarks and directions have already been given, and will be found in Part the First, respecting the passage on either side of Red Islet and its Reef, the Green Island Lighthouse and Reef, and the anchorage under the latter. (See Articles 28 and 50.)

*The River
divides into two
great Channels.*

The whole distance from Green Island Lighthouse to the Light-vessel at the Traverse is 54 miles. For the first 30 miles of that distance the river is divided into two channels (the North and South) on either side of Red Islet, White Islet, and Hare Island, with the reefs and banks attached to them, or bearing their names: all which, lying in the same direction, form a narrow but not continued ridge of greywacke and slate rocks nearly in the middle of the river. In the remainder of the distance the river is unobstructed by detached shoals from the S.W. end of Hare Island Bank, to the N.E. end of the middle ground of the Traverse. The shoals just mentioned were supposed to be connected together by the English Bank, which however terminates off Murray Bay, 7 or 8 miles to the westward of the Hare Island Bank. I shall describe the islands above mentioned, with their reefs, banks, and anchorages, and afterwards the mainland, and the channels on either side of them.

Red Islet.

88. RED ISLET, bearing N.W. by W. $\frac{1}{4}$ W. $5\frac{1}{2}$ miles from Green Island Lighthouse,* is small, low, and of shingle partially covered with grass, and resting on slate rock. This islet is quite bold at its S.W. end, but a rocky bank or reef, nearly dry in some parts at low water, extends $2\frac{1}{2}$ miles to the N.E. and is $1\frac{1}{2}$ miles wide. There is good warning by the lead in approaching this bank from the eastward, as will be seen in the chart, but vessels should be cautious in approaching it from the northward, because the water is deep, and the ebb sets strongly upon it on that side. In fine summer weather, vessels becalmed, or bound up, and wishing to wait for the tide, may safely anchor to the east and S.E. of this bank in 10 fathoms at low water, where they will have good ground, and find the strength of the ebb tide much broken by the bank. Vessels, in case of need, may also anchor

Red Islet Bank.

* The bearings are always magnetic, and the soundings the depth at low water spring tides, unless it be especially mentioned to the contrary.

in the same depth at the distance of 200 fathoms from the south side of the islet, but the ebb tide runs there at the rate of $6\frac{1}{2}$ miles per hour. *Red Islet Bank.*

The Green Island Lighthouse and Beacon in one, bearing S.S.E. $\frac{1}{2}$ E., clear the Red Islet Bank to the eastward, as mentioned in Article 28. White Islet, kept twice its own breadth open to the northward of Hare Island, will clear it to the southward: but as these marks are distant, and may not always be plainly distinguished, the lead should never be neglected, nor the vessel taken nearer than 9 fathoms at low water. There are no marks for clearing this bank to the northward, nor do the soundings there afford sufficient warning for the safety of a vessel.

WHITE ISLET, bearing S.W. $\frac{1}{2}$ W. nearly 10 miles from Red Islet, is small, low and wooded, presenting the appearance of a clump of trees on the only part of Hare Island North Reef which does not cover at high water. That reef, which however is commonly called the White Island Reef, is composed of a narrow ridge of highly inclined slate rocks, and extends 3 miles to the N.E. of the islet. Its N.E. end is extremely dangerous, because there is no mark for clearing it, and the flood tide sets strongly upon and over it, into the North Channel. On the N.E. end of the reef, the north side of Hare Island and the south side of White Islet are touching, and the west point of Caona bears S.E. $\frac{1}{2}$ E. Vessels should come no nearer to it than 10 fathoms at low water. The passage between the N.E. end of the White Islet Reef and Red Islet is $6\frac{1}{2}$ miles wide and free from danger. *Hare Island North Reef, or White Islet Reef.*

HARE ISLAND, about $1\frac{1}{2}$ miles to the S.W. of White Islet, is $7\frac{1}{2}$ miles long in the direction of the river, and less than a mile wide. In height it does not exceed 250 or 300 feet; and it is of greywacke and slate rocks, dipping at a high angle to the S.E., and thickly wooded. The supply of water is extremely scanty on this large island, and fails entirely in the month of August in dry seasons. The soil is not good, and it has no inhabitants. *Hare Island.*

THE BRANDY POTS are three round-backed islets of steep greywacke rocks, lying off the south-east side of Hare Island, at the distance of $\frac{1}{4}$ of a mile. The northermost islet is the largest and highest, being about 150 feet high, and covered with trees. The southermost islet, separated from the former by a very narrow channel, dry at low water, is white, and almost bare of trees. The north-eastermost islet is small and wooded. The three islets together *Brandy Pots.*

Brandy Pots. cover a triangular space about $\frac{1}{4}$ of a mile in diameter. The channel between them and Hare Island is only fit for boats. There is a good spring well on the S.W. point of the northern islet, but it fails in very dry seasons.

*Brandy Pot
Bank.*

The south-west point of the Brandy Pots bears S.S.W. $\frac{1}{4}$ W. nearly 2 miles from the N.E. end of Hare Island; it is extremely bold, but a bank, with from $1\frac{1}{2}$ to $2\frac{3}{4}$ fathoms at low water, extends both to the N.E. and S.W. of it, and northward to the shore of Hare Island. Small vessels anchor on this bank, half a mile to the S.W. of the Brandy Pots, in $2\frac{3}{4}$ fathoms, hard clay and sand bottom, and well sheltered from easterly winds. Large vessels anchor further out in the stream, in from 9 to 14 fathoms at low water, this being considered an excellent anchorage, although so much exposed in easterly winds. The holding ground is excellent, the tides not very strong, and the sea not so heavy as might be expected. The anchorage to the eastward of the islets in westerly winds is better sheltered, with a less depth of water. Vessels may go as near as 6 fathoms at low water as far down as White Islet, and have good ground and plenty of room to get under way. The Brandy Pots is the usual rendezvous for vessels bound down the St. Lawrence, and waiting for a wind.

A good mark for clearing the bank at the Brandy Pots for the first mile and a half to the S.W. of those islets, as well as to guide large vessels in anchoring with easterly winds, is not to shut the whole of White Island in behind the east point of the Brandy Pots. The bank which extends to the N.E. of the Brandy Pots will be cleared by keeping the whole of the Pilgrim Islands open to the southward of the Brandy Pots, or by going no nearer than 5 fathoms in a large vessel.

*Hare Island
South Reef.*

THE HARE ISLAND SOUTH REEF. The part of this reef which the tide does not cover, lies $2\frac{1}{2}$ miles to the S.W. of Hare Island, is small and low, of shingle covered with grass and spruce bushes, and rests on slate rocks, which dry at low water for a considerable distance from it, both up and down the river. This reef is situated

*Hare Island
Bank.*

towards the northern side of the Hare Island Bank, which is of great extent, with not more than 9 feet at low water, over the greater part of it. The eastern end of this bank, in 3 fathoms at low water, bears E. N. E. $\frac{1}{2}$ E. 3 miles from the reef. About $\frac{1}{4}$ mile to the westward of the east end of the bank, there is a small rocky Knoll, with 2 fathoms least water, the position of which has been

Knoll.

vaguely and erroneously described in the old directions. On this *Hare Island*, Knoll, White Islet is only just shut in behind the south side of *Knoll*, Hare Island; and the S.W. end of Hare Island bears N.W. $1\frac{1}{2}$ miles. At the distance of $\frac{1}{2}$ mile from the east end of Hare Island *Patch*, Bank, there is a small 3 fathoms Patch, bearing from Hare Island South Reef E.N.E. $\frac{1}{4}$ E.; and from the S.W. end of Hare Island E.S.E. $\frac{1}{4}$ E. 2 miles. I think that 4 fathoms can be carried through between this patch and the east end of the bank, by keeping Hare Island and White Islet touching, but it is a narrow channel, and the bottom is so foul and uneven that I cannot be certain. The leading mark in the old directions, viz., White Islet, midway between Hare Island and the Brandy Pots, clears the Knoll, but leads right over the 3 fathoms Patch. But in fact there is no channel here for a very heavy ship at low water, for a ridge of sand and rock, called the Middle Bank, with not more than from $3\frac{1}{2}$ to 4 fathoms *Middle Bank*, in low tides, extends all the way from the Hare Island Bank to the Middle Shoal and Barrett Ledge. Between Hare Island Bank and the S.W. end of Hare Island there is an unfrequented channel *Unfrequented Channel*, half a mile wide, and from $3\frac{1}{2}$ to 4 fathoms deep. To the S.W. the Hare Island Bank extends 6 miles from the reef of the same *South West Entrance of Hare Island Bank*, name, and its S.W. end will be cleared in 3 fathoms, by keeping Kamourasca church just open to the westward of Grand Island, bearing S. by W. $\frac{1}{2}$ W.

There is very good anchorage all along the south side of this bank in 7 fathoms, which depth is near enough for a large vessel.

THE BARRET LEDGES are two small patches of rocks $\frac{1}{2}$ of a *Barret Ledges*, mile apart, on a W. by S. line of bearing, and having 7 and 8 fathoms between them. There is equally deep water close to these rocks on all sides excepting the S.W.; and there are 10 and 11 fathoms within a quarter of a mile of the eastern rock. The western ledge has 12 feet, and the eastern $10\frac{1}{2}$ feet least water. From *Marks for Eastern Ledge*, the latter, the S.E. point of the Brandy Pots bears W. $\frac{1}{2}$ N. $2\frac{1}{2}$ miles: White Islet centre N.N.W. $3\frac{1}{2}$ miles: and Loup Point S.E. by S. 3 miles. Moreover the east point of Great Pilgrim Island is in one with a remarkable summit in the highlands of Kamourasca, bearing S.W. by S. This summit kept well open clears the ledge to the southward. The S.W. point of Hare Island is on with the south side of Eboulemens mountain, bearing W.S.W. The south side of the mountain kept well shut in behind the point of the island will clear the ledge, and also the Middle Shoal to the

Barret Ledges. northward. For these leading marks, see views B. and C. on the plan. Lastly the whole of the Bay of Rocks, on the north shore, is well open to the eastward of Hare Island.

Western Ledge. The Western Ledge lies exactly in the line joining Loup Point with the N.E. point of Hare Island, and with the S.W. side of the Bay of Rocks: the two last bearing in one from the rock N.W. $\frac{1}{2}$ N.: and the south point of the Brandy Pots W. $\frac{1}{4}$ N. 2 miles. A black buoy is professedly placed upon this rock, but is seldom exactly on the rock, and often $\frac{1}{2}$ of a mile distant from it. Perhaps the anchor does not hold in the strong tide and rocky bottom; but however this may be, I recommend vessels not to approach nearer to this buoy than half a mile, unless they are well acquainted with the mark for clearing the ledge.

Middle Shoal. THE MIDDLE SHOAL is a small patch of rocks at the N.E. end of the Middle Bank; it has $10\frac{1}{2}$ feet least water, and bears from the western rock of Barrett Ledges S.W. $\frac{1}{2}$ W. $1\frac{1}{2}$ mile. There is from 4 to 8 fathoms round and close to this shoal, and 5 fathoms between it and the ledge. This shoal lies exactly in the line from the extreme of Loup Point to the N.W. point of the Brandy Pots, the latter bearing N.W. by W. $\frac{1}{4}$ W., and the south point of the same islands bearing N.W. $\frac{1}{2}$ W. $1\frac{1}{2}$ miles.

SOUTH SHORE;

BELOW THE TRAVERSE.

Green Island. 89. In Part the First, Article 50, Green Island Lighthouse and Reef have been described, and it is only necessary for me to add, in addition to the leading marks for clearing the latter, therein given, that the south extreme of the Pilgrim Islands touching the west extreme of Green Island will also clear the Green Island Reef in 5 fathoms: but the Pilgrims are so distant, that they can only be made out from the reef in fine clear weather. Green island extends 5 miles S.W. by W. from the Lighthouse, with bold and rocky shores. Its S.W. point is low and bare, and has a dangerous reef extending from it a mile to the westward. This reef curves out to the northward beyond the general line of the island, so as to bring the Lighthouse to bear N.E. by E. $\frac{1}{2}$ E. The north side of this reef is so bold that there is no warning by the lead. At night, vessels should come no nearer to it on that side than 25 fathoms, nor bring the light to bear to the northward of E.N.E., until the

Green Island Reef.

eastern end of Cacona bears S.S. E., which bearing clears it to the *Green Island Reef*. westward.

The flood tide sets strongly over the tail of this reef towards *Tide*. Cacona, and the ebb the contrary. There is generally a great rippling off the end of the reef, caused by the meeting of the flood tides from either side of Green Island.

Midway between the S.W. end of the reef and Cacona Rock *Anchorage S. W. of Green Island*. there is good anchorage and shelter from easterly winds, in 6 fathoms muddy bottom, but there might be delay and difficulty in getting out when the wind changed to the westward, on which account it is seldom used.

Green Island is of greywacke and slate rock; wooded, and rising to about 250 feet above the sea. The channel between this island and the mainland is 1 mile wide in the narrowest part, and dries at low water, with the exception of a very narrow channel for boats.

CACONA is a remarkable rocky peninsula, about $1\frac{1}{2}$ miles long, *Cacona*. three or four hundred feet high, and joined to the main by a low and marshy isthmus. Its west point bears S.W. by S. $3\frac{1}{4}$ miles from the S.W. end of Green Island, and is quite bold; but a reef of slate, dry at low water, extends from it north-eastward to Cacona Rock, which is small, bare, bold, always above water, *Cacona Rock*. and distant 400 fathoms from the north point of Cacona.

THE PERCÉE ROCKS form a long reef, which commences $1\frac{1}{2}$ *Percée Rocks*. miles to the south-westward of Cacona, and extends 2 miles further in the same direction, parallel to the shore, from which it is distant about a mile. There are two patches of rocks, about a mile apart, upon this extensive reef, which can almost always be seen, since they are only covered in high tides. There is a narrow channel, $3\frac{1}{2}$ fathoms deep, between this reef and the mainland.

Green Island and Cacona, just touching, and bearing N.E. $\frac{1}{4}$ E., lead along the north side of the Percée Rocks in three fathoms. Therefore keep those marks open, and you will clear the rocks to the northward. Loup River church, on with Loup Point bearing S. $\frac{1}{4}$ W., will clear the rocks fully half a mile to the westward. At night come no nearer to these rocks than 8 fathoms, for they are very bold to the northward.

LOUP RIVER is $5\frac{1}{4}$ miles S.W. $\frac{3}{4}$ S. from the west point of *Loup River*. Cacona, and 5 miles S.E. by E. from the Brandy Pots. It is a considerable stream, opening to the westward, with 3 feet at low water in its entrance. Boats can ascend it about a mile at

River Loup. any time, excepting low water, and vessels have lain aground just within the entrance, and taken in their cargoes of lumber; but it was not found to answer, and they now load outside. There are rapids, mills, and a bridge, rather more than a mile up the river, where boats may be sent for water when the tide is in.

Anchorage. The anchorage off this river is better sheltered than that of the Brandy Pots in easterly winds, and is well sheltered in S.W. winds also, but the riding is very heavy with a gale from the northward. The best berth is rather to the eastward of the line joining the point of the river and the Brandy Pots, in $4\frac{1}{2}$ fathoms, mud bottom, and from $\frac{3}{4}$ to 1 mile off shore. Further to the S.W., there is less water and bad ground on Loup Bank, which consists of slate, thinly covered with sand and mud and extends 3 miles out from the shore to the 3 fathoms line, reaching from the river in a W.S.W. direction as far as the Pilgrim Islands.

Pilgrim Shoal. THE PILGRIM SHOAL is a long and narrow ridge of red slate rocks, thinly covered with sand, and extending 4 miles S.W. by W., or parallel to the northern edge of the Loup Bank. The shoal is not above a third of a mile wide, and has from 12 to 15 feet least water. The channel between it and the Loup Bank is less than 2 cables' wide, and only $3\frac{1}{2}$ fathoms deep. On the eastern end of this shoal, in 3 fathoms, the N.E. end of the trees of Hare Island, and the eastern side of the Brandy Pots, are in one, bearing N. $\frac{1}{4}$ E. Cape Eagle and the N.E. side of Hare Island Reef are just open, bearing W. $\frac{1}{4}$ S.: St. André Point is seen through between the Great and Middle Pilgrims, bearing S.W. $\frac{1}{4}$ S.: and lastly the east point of the Pilgrim Islands bears S.S.W. $\frac{1}{4}$ W., $3\frac{1}{2}$ miles.

On the S.W. end of the Pilgrim Shoal, the centre of White Islet is in one with the N.W. point of the Brandy Pots: Cape Salmon is well open to the westward of the Hare Island Reef, the S.W. side of the latter bearing W.N.W., and the N.E. end of the Long Pilgrim bears S.S.E., three quarters of a mile. The channel for large ships is between the Pilgrim Shoal and the Hare Island Bank, and is there only $1\frac{1}{2}$ miles wide.

Pilgrim Islands.

THE PILGRIMS are five islands of greywacke rock. Their eastern point bears S.W. by W., $7\frac{3}{4}$ miles from Point Loup. The two westernmost islands are nearly white, bare of trees and so nearly joined together as to appear like one; hence they are called the Long Pilgrim, and form a narrow precipitous ridge 3 miles long, in a S.W. $\frac{1}{4}$ W. direction. The two Middle

Pilgrims and the Great Pilgrim, which is the easternmost, are *Pilgrims*. connected by reefs, dry at low water; but between them and the Long Pilgrim there is a narrow channel not more than 2 feet deep in one part, but having a deep hole with 4 fathoms water exactly between the Long and the Westernmost Middle Pilgrim.

The Middle and the Great Pilgrims extend about $1\frac{3}{4}$ miles to the eastward of the Long Pilgrim, and the whole extent of these islands is about $4\frac{1}{2}$ miles in a direction parallel to the shore, from which they are distant $1\frac{1}{4}$ miles.

The Great or Eastern Pilgrim is the highest, being about 300 feet high, and partially wooded with scrubby spruce trees. It is very remarkable, as will be seen by View B in the plan. Shoal water extends only 200 fathoms off the eastern end of the Long Pilgrim, but widens to 600 fathoms at the S.W. end of the island. There is no channel between the Pilgrims and the main, where it is so shallow that carts can cross in low tides. There is anchorage for small vessels in westerly winds under the Long Pilgrim, and abreast of the Great Pilgrim, in $2\frac{1}{2}$ fathoms.

The church of St. ANDRÉ is on the mainland opposite the *St. André*. S.W. end of the Pilgrims; and Point St. André, a small and high rocky peninsula, lies to the westward of it. The line joining the east side of this peninsula and the church passes over the Hare Island Bank, in $2\frac{1}{2}$ fathoms, and $1\frac{1}{4}$ miles from its end. Everywhere on the bank to the westward of that line, that is, with the church hidden behind the peninsula, there is no less than $2\frac{1}{2}$ fathoms water.

St. ANDRÉ BANK extends from the Pilgrims to the Kamourasca Islands, and in many places dries out more than a mile from the shore. Its northern edge is very steep, but there is an excellent mark for it, viz., the south sides of Burnt and Grande *St. André Bank.* Islands in one, bearing S.W. $\frac{1}{4}$ W., which leads along it at the *Mark for its edge.* distance of from 150 to 200 fathoms from the 3 fathoms line of soundings.

THE KAMOURASCA ISLANDS are nearly 6 miles to the south- *Kamourasca Islands.* westward of the Pilgrims, and $2\frac{1}{2}$ miles from the mainland, to which they are joined by shoals that dry at low water. Grande *Grande Isle.* Isle is the north-easternmost, and together with Burnt Island *Burnt Island.* extends about 2 miles along the northern edge of the bank. These islands are long and narrow ridges of greywacke rock, and are extremely bold to the northward, there being 20 fathoms water close to them. Crow Island lies about three *Crow Island.*

*Kamourasca
Islands.*

quarters of a mile to the S.S.W. of Burnt Island; and there are besides two small and bare rocky islets to the eastward of Crow Island, and within Burnt Island. Crow Island is distant about three quarters of a mile from the shore, at the church and town of Kamourasca, and carts can cross to it at low water. There is a wharf and good landing near the church, and water may be obtained at any time of tide, when there is water enough for boats over the shoals, but there is no water on the islands. In the bay of Kamourasca, immediately to the S.W. of the town, the bottom, which dries at low water, is of mud; and as it is well sheltered, small vessels may safely lie aground and winter there. Moreover this is a place where vessels in distress, when they have lost their anchors, may be saved by running them in at high water, between the reef of Cape Diable and Crow Island, leaving the latter from a quarter to a half a mile to the eastward in passing; and when within the reef, hauling in to the bay to the S.W. In high spring tides 13 or 14 feet of water will be found over the mud, but in neap tides there is seldom more than 9 or 10 feet.

*Kamourasca
Bay.**Anchorage.*

There is good anchorage off Kamourasca with the prevailing winds up and down the river, but exposed to N.W. winds. The best berth to anchor in is where the church of Kamourasca is just open to the westward of Crow Island, bearing S.E. $\frac{1}{4}$ E., and Grande Island just open to the northward of Burnt Island, bearing N.E. $\frac{1}{4}$ E. There 7 fathoms over stiff mud will be found, at the distance of 400 fathoms from the 3 fathoms edge of the bank. Large vessels wishing for more room may anchor further out anywhere to the westward, as they will see by the soundings in the Plan.

Cape Diable.

Three miles S.W. by W. from Crow Island, across the bay of Kamourasca (all dry at low water) is CAPE DIABLE, from which reefs of slate extend north-eastward, more than half way to Crow Island, and north-westward three quarters of a mile: in which last direction the distance out to the 3 fathoms edge of the bank is nearly $1\frac{1}{2}$ miles. ST. DENIS POINT is nearly 3 miles to the W.S.W., and Point Origneaux $7\frac{1}{4}$ miles W.S.W. $\frac{1}{4}$ W. from Cape Diable. Point Origneaux is an extreme of the land running out to within three quarters of a mile of the edge of the bank, and the land trends from it S. W. $\frac{1}{2}$ S., $1\frac{1}{2}$ miles to Point Iroquois, and 4 miles to Point Ouelle, where the distance out to the 3 fathoms edge of the bank increases again to fully 2 miles.

*St. Denis
Point.**Point
Origneaux.**River Ouelle.*

THE RIVER OUELLE has its entrance to the westward on the

south side of the point of the same name. In high spring tides 15 *River Ouelle*. feet of water can be carried into this river, and up to the bridge at the village, and near the church of the same name, about $1\frac{1}{4}$ miles from the entrance.

The church and village of *ST. ANNE* has some very remarkable *St. Anne*. hills near it, and stands upon rising ground S. $\frac{1}{2}$ W. $3\frac{1}{4}$ miles from Point Ouelle. The church and village of *ST. ROQUE* is nearly $8\frac{1}{4}$ *St. Roque*. miles S.W. $\frac{1}{2}$ W. from the same point; and nearly three quarters of a mile to the eastward of Point St. Roque.

POINT ST. ROQUE bears S.W. by W. 9 miles from Point *Point St. Roque*. Ouelle; and from this line to the shore, a distance of $2\frac{1}{4}$ miles, the bay of St. Anne dries at low water, the bottom being mud, but *St. Anne Bay*. with thousands of boulders, or large stones.

The bank of shoal water, extending from the south shore to the distances which have been mentioned at the principal points, continues, in a W.S.W. direction, all the way from the Kamourasca islands to the Traverse, and beyond that passage, the south side of which it forms. Off St. Anne and St. Roque, this bank takes the name of these villages, being known by the name of the Shoals of St. Anne and St. Roque.

THE SHOALS OF ST. ANNE extend fully 5 miles out from the *Shoals of St. Anne*. high water mark, and are very dangerous. They are of sand and mud thickly strewn with very large stones, many of which show at low water. The St. Anne Buoy (chequered black and white) *St. Anne Buoy*. is intended to point out the northern edge of these shoals, which purpose it answers tolerably well, without being exactly in the same position in different years. At the time of our survey it was either improperly placed, or had drifted into 2 fathoms, a quarter of a mile within the edge of the shoal, and bore W. $\frac{1}{4}$ N. 4 miles from Pointe Ouelle. All along the edge of the bank, from Kamourasca up to this buoy, there is excellent anchorage in from 7 to 10 fathoms, stiff mud bottom.

The shoals trend in a S.W. by W. $\frac{1}{2}$ W. direction nearly 5 miles from the St. Anne Buoy to the light-vessel at the Traverse, which is moored on the outer point of the shoals of St. Roque, and will be described in the next chapter, in which will be found a brief description and directions for the Traverse.

THE ENGLISH BANK is a ridge of sand, varying in breadth *English Bank*. from $\frac{1}{2}$ to $1\frac{1}{4}$ miles, and extending N.E. ward from the Middle Ground of the Traverse. For the first 7 or 8 miles (that is, down to

English Bank. about opposite the river Ouelle) it runs nearly parallel to the edge of the Shoals of St. Anne, at the average distance of a mile: further eastward it trends to the northward towards Murray Bay, which it approaches to within $2\frac{1}{2}$ miles, and its north-eastern extremity, in 10 fathoms, is more than $\frac{1}{2}$ a mile to the westward of a line from the church at that place to the church at Kamourasca. On the western and greater part of this bank the depth is between 6 and 8 fathoms; and on the eastern part from 9 to 11 fathoms. The English and Hare Island Banks have been made to join in the old charts and directions, but that is an error, since there is a distance of 7 or 8 miles between them, in which the river is deep from shore to shore, as will be seen by the plans.

SOUTH CHANNEL.

*South Channel,
abreast of Hare
Island.*

90. THE SOUTH CHANNEL is justly preferred for the common purposes of navigation. In that part of it which is below the Traverse, and which is now under consideration, the tides are not so strong nor the water so inconveniently deep as they are in the corresponding part of the North Channel below Coudres Island. Moreover it possesses good anchorage almost in every part, and water enough for the largest ships at all times of the tide. It is true that several of our line-of-battle ships and large frigates have touched the ground in passing the S.W. end of Hare Island, but that has arisen from their following the usual route to the northward of the Barrett Ledges, and into the Brandy Pot Channel: a course which has been erroneously represented in former directions as always to be preferred by large ships. It is, on the contrary, only very large ships which need to shun that course, as entailing upon them the necessity of crossing the Middle Bank, in from $3\frac{1}{2}$ to 4 fathoms at low water, or even in a less depth, if they cross it, according to the old directions, with White Island open between Hare Island and the Brandy Pots.

*Brandy Pot
Channel.*

There is very deep water, from 14 to 20 fathoms, between the Middle Bank and Hare Island, but it ends in a "cul de sac:" there is no getting out of it into the Main Channel without crossing the Middle Bank to the southward, which should never be attempted in a ship of the line or very heavy frigate before half flood. It would however be far better for such heavy ships to pass to the southward of the Barrett Ledges, Middle Shoal, and Middle Bank, where the channel is direct, and for a very large

ship (that is, from 5 fathoms to 5 fathoms at low water) a mile wide in the narrowest part with from 6 to 11 fathoms water over clay and mud bottom. If the river were likely to be much frequented by such heavy ships, it would be desirable that, in addition to the buoy on the Barrett Ledges, there should be buoys on the Middle Shoal, and 3 fathoms Patch off the eastern tail of the Hare Island Bank; also on the eastern and western extremes of the Pilgrim Shoal. With the assistance of those buoys, a ship of the line might be beat up or down with perfect safety.

*South Channel
abreast of Hare
Island.*

*Requisite
Buoys.*

The circumstance which has given a preference to the Brandy Pot Channel to the northward of the Barrett Ledges, and which will continue to do so for the common purposes of navigation, is the advantageous position of the anchorage at the Brandy Pots, especially in northerly winds, when it is absolutely necessary that vessels bound down the river should be to windward on account of the rapid tide setting to the southward from between the White Islet Reef and Red Islet. Moreover vessels bound to sea usually rendezvous at the Brandy Pots to wait for a wind, or the tide: one ebb being sufficient, with a moderately good working breeze, to take them down below Green Island, where they can always gain ground to the eastward whilst the weather remains fine. The Brandy Pots also are about the point that a fair sailing merchant vessel can reach in one flood from the anchorage under Green Island Reef, where they usually wait for the tide, when beating up with westerly winds.

Referring to Art. 28 and 50, for the approach to Red Islet and Green Island Reef, I shall proceed to give brief directions for ascending the river by the South Channel.

FROM GREEN AND RED ISLANDS TO THE BRANDY POTS.

Vessels arriving as high up as Green Island by day, with clear weather and a fair wind, will require little information, beyond that which the Admiralty plans furnish, for their guidance to anchorage off either the Brandy Pots or Loup Point: where they may wait for a pilot, or proceed further as they may prefer. They will of course observe the clearing marks and directions for Green Island Reef, Red Islet Reef, the Barrett Ledges, and Percée Rocks (Art. 88. 89), and that the Brandy Pots and Hare Island, touching, and bearing S.W. $\frac{1}{4}$ W. (see View A.) lead through between Green Island and Red Islet nearly in

*South Channel
abreast of
Green Island.*

*South Channel
off Green
Island.*

mid channel, and serve as an excellent guide to vessels bound either up or down, in this part of the river. The rate and direction of the strong tides will be found in the plans, and will moreover be mentioned at the close of this chapter: they can never be safely neglected, but must be especially attended to at night or in thick weather. With a side wind, too, their oblique direction across the river must be allowed for. Therefore in a vessel coming up the river, and being under the north shore with a northerly wind, attend to the following directions. If you wish to take the South Channel, bring the Green Island Lighthouse and Beacon in one, bearing S.S.E. $\frac{1}{2}$ E., and run down upon this leading mark till White Islet is opened fully twice its own breadth to the northward of Hare Island. Then haul up, and if the tide be flood, you have merely to take care not to close those marks for clearing the south side of Red Islet Bank, which, with the flood, you need not approach nearer than 10 fathoms. It is of consequence to observe (more particularly with a southerly wind than in this case) that the flood sets through between Red Islet and the White Islet Reef, and strongly over the tail of the latter into the North Channel.

*Set of the
Tides.*

But with the ebb tide, you must luff up close under the Red Islet Bank, taking care however to keep White Islet fully twice its own breadth open to the northward of Hare Island, and not to approach the bank nearer than 7 fathoms, till Red Islet bears N.W., when you can keep your luff as close as you may find necessary to prevent your being set over to the lee shore by the strong ebb coming from the North Channel between White and Red Islets, and setting over towards Green Island Reef. You may keep the same marks (White Islet open of Hare Island) on until you approach the White Islet Reef to 10 fathoms water; then edge away along the south side of that reef, where the tides set fairly up and down the river, and are of moderate strength.

It is scarcely necessary to mention that in the voyage down the river also, these tides must be attended to. For instance, with a northerly wind and ebb tide, keep well to windward under the White Islet Reef, and so as not to be set down towards the Green Island Reef. With a southerly wind and flood tide, on the contrary, you must keep well to the southward, in order to avoid being carried by the tide into the North Channel.

*Off Green
Island at
Night.*

At night, when Green Island Light can be seen, its bearing and the soundings in the chart will prove sufficient guides, even although

the land should not be seen. In a vessel under the north shore, *South Channel off Green Island at night.* coming up with a northerly wind, bring the light to bear S.S.E. and bear up across the tail of the Red Islet Bank, allowing for the tide so as to keep the light on that bearing. Whilst crossing on that bearing from the light you will have 11 or 12 fathoms when in the stream of the bank, and be $1\frac{1}{2}$ miles distant from its eastern end in 3 fathoms water. Keep your lead going of course, and if the tide be flood, take care that it does not set you too near the end of the bank. Ten fathoms is as near as you ought to go at night.

Continue your course towards the light until you deepen to 20 fathoms, then haul to the south-westward under the Red Islet Bank. Pass it in 20 fathoms, which is near enough for a stranger at night, and when the Light bears S.E. by E. $\frac{1}{2}$ E., you will be on the line from it to Red Islet, which will be distant about $1\frac{1}{2}$ miles. From this position the south point of the Brandy Pots will bear S.W. $\frac{1}{4}$ W., $13\frac{1}{2}$ miles; but you must remember what has been said of the set of the tides between Red Islet and the White Islet Reef, and must regulate your course accordingly, guiding yourself also by the bearing of the light, and more especially by the soundings in the plan.

In a vessel, at night, with an easterly wind coming up, as directed in Article 27, and having made the Green Island Light, run up in 20 fathoms until you are within 3 miles of it, or till it begins to bear to the southward of S.W. Then haul out into more than 30 fathoms, and run up in the deep water, till the light bears S.E., when you will be well past the reef, and may continue to run up, coming no nearer to Green Island than 25 fathoms, in order to avoid its western reef. See Art. 89. Violent and breaking *Ripplings.* ripplings, which change their position with the time of tide, will be met with between Green and Red Islands, but there is no danger beyond those which are shown in the plans. An easterly gale against the ebb tide causes a very heavy sea. As soon as you have past *To make the Brandy Pots.* Cacona, and wish to make the Brandy Pots, haul over to the north-westward, towards White Islet, into 9 or 10 fathoms, and run up in that depth till you see those islands: do not come to the southward into deeper water for fear of Barrett Ledges. If you wish to run up to the southward of that ledge, keep Green Island Light only just shut in behind the west end of Green Island, bearing N.E. $\frac{1}{4}$ E., sheering to the northward occasionally to sight it, or

*South Channel
between Bar-
rett Ledges and
Percée Rocks,
at night.*

going no further to the southward than 8 fathoms, till you are sure that the Percée Rocks are past. The Green Island Light only just shut in behind, or kept only just in sight over the low west extreme of Green Island, bearing N.E. $\frac{1}{2}$ E., will clear to the southward of the Barrett Ledges, and nearly in mid channel between the Middle Bank and Pilgrim Shoal. It is seldom however that the Light can be seen so far as the latter. Whenever it disappears, providing that you are certain that you are past the Percée Rocks, haul to the southward into 6 or 7 fathoms, and run up along the south side of the channel in that depth, consulting the plans; or anchor till daylight, as may be preferred.

I give no direction as to what course should be steered, or what distance run, because they must vary with the circumstances of tide and wind. The courses and distances from one place to another will be seen on the plans, but the bearings of the light, or the land, combined with the soundings, can alone be trusted for the safe conduct of a vessel in such a navigation.

*Weighing from
Green Island.*

In beating winds, as the set of the tides has been mentioned, and will moreover be seen in the plans, it seems only necessary to observe that a vessel, waiting tide under Green Island Reef, should not wait for the stream of flood to make, but should weigh as soon as it is low water by the shore. She should then stand across the remaining stream of the ebb towards the tail of the Red Islet Bank, where she will meet the first of the flood, and should work up in it as far as Red Islet, by which time the flood will have made on both sides, and she may therefore stand over to the southward. Generally speaking the ebb is very strong, the water deep, and the bottom not good for anchoring, below Cacona; nevertheless in case of the wind failing, vessels are sometimes anchored in about 20 fathoms any where along the shore of Green Island above the Lighthouse. The tides are not very strong there, but the ground is bad, and the vessel so near the shore that the occurrence of a strong northerly wind would be attended with much danger. Most merchant vessels, with a good working breeze, can beat from below Green Island Reef to the Brandy Pots in one tide. In neap tides, however, it is often not easily accomplished, for the flood is then imperceptible in the centre of the passage, and a vessel can beat against it with ease.

BRANDY POTS TO THE TRAVERSE.

Vessels proceeding up the river from the Brandy Pots may

cross the Middle Bank any where to the westward of a line from those islands to Loup River church, and to the eastward of Hare Island Bank. See Art. 87. But if they wish to have more than 3 or $3\frac{1}{2}$ fathoms, they must depart from the old directions, and cross with the White Islet open to the eastward, instead of westward, of the Brandy Pots. The N.E. extreme of the trees of Hare Island, just open to the eastward of the Brandy Pots, is a good line to cross upon. I do not think there is less than 4 fathoms in ordinary spring tides upon that line. Having crossed the Middle Bank, and deepened your water to the southward into 8 fathoms, steer S.W. $\frac{1}{4}$ W., and if your compasses are correct, the Kamourasca Islands will be a little on your larboard bow. If the weather be clear, you will be able to distinguish Burnt Island from Grande Island by the time you are abreast of the Great Pilgrim. Open the north side of Burnt Island, only just in sight to the northward of Grande Island, bearing S.W. $\frac{1}{4}$ W., and keep it so as a leading mark to clear the western part of the Pilgrim Shoal. See Art. 89. When past that shoal, with a leading wind and clear weather, nothing more seems requisite than to pay attention to the soundings in the plans, and regulate your course accordingly. S.W. $\frac{3}{4}$ W., allowing for deviation, will take you past the Kamourasca Islands, after which you must incline more to the westward, following the edge of the South Bank in 8 or 9 fathoms up to the Buoy on the shoals of St. Anne.

*South Channel
crossing the
Middle Bank.*

*Leading Mark
between Pil-
grim Shoal,
and Hare
Island Bank*

In thick weather, or at night, after crossing the Middle Bank to the southward, as before directed, either one side of the channel or the other should be taken as a guide for running up by the lead: say in 7 fathoms. Either side may be taken as high up as the middle of the Long Pilgrim, after which the south side of Hare Island Bank must be followed in the same depth; for the western part of the Long Pilgrim, the Bank of St. André, and the Kamourasca Islands, have deep water close to them, affording no guidance by the lead. After passing Kamourasca, the edge of the south bank may be easily followed in 7 fathoms, or in 10 fathoms, if it be a large ship, up to St. Anne Buoy.

*along South
Side of Hare
Island Bank,*

*and crossing to
Kamourasca.*

With beating winds, the lead and the soundings in the plans must tell when to tack, excepting in the case of St. André Bank. In the board from the northward towards that bank, tack immediately after Burnt Island disappears behind Grande Island, and before it reappears to the southward. See Art. 89.

*St. André
Bank.*

South Channel. With a good breeze and a fair sailing vessel, the anchorage off Kamourasca will be gained from the Brandy Pots in one tide.

Anchorage. If not, there is good anchorage and easy tides all along the southern side of Hare Island Bank, as well as off its S.W. end. A vessel with a good breeze will beat from Kamourasca to St. Anne Buoy with one good tide; but not always in neap tides, when the flood is very weak in that wide and clear part of the river. The English Bank will be an excellent guide to a vessel beating at night, and she may anchor on any part of it in fine weather, but will find the tides becoming strong upon it in proportion as she approaches the Traverse. The anchorage all along the south shore, up to within 2 or 3 miles of the light vessel at the Traverse, is far preferable.

NORTH SHORE;

BELOW COUDRES ISLAND.

North Channel. 91. The Northern shore of the St. Lawrence from the Saguenay River to Coudres Island is bold and mountainous. The granitic hills in most parts rise immediately from the river, forming steep or precipitous headlands. Near the entrance of the Saguenay these hills are not above 1000 feet high, but those of Eboulemens attain an elevation of 2547 feet above the tide-waters of the river.

At the end of Art. 58, page 138, I described the coast of the estuary up to Little Bergeron Cove. I shall now recommence from that point, and proceed with my description to the westward.

Point Vaches.

VACHES POINT, the east point of entrance of the Saguenay, bears S.W. by W. $\frac{1}{2}$ W. about 6 miles from Little Bergeron; and N.W. $\frac{3}{4}$ N. $6\frac{1}{2}$ miles from Red Islet. The high clay cliffs at this point are easily recognized; they are known by the name of the Saguenay Cliffs. There is anchorage in 7 fathoms mud when these cliffs bear W. by S. distant 3 miles. At this anchorage, Red Islet and the S.W. end of Green Island are in one. The vessel will be 400 fathoms from the 3 fathoms line of depth, and nearly a mile off shore. The water becomes deep immediately outside this anchorage, which is of use to vessels coming up under the north shore with a scant N.W. wind, at the end of the flood and close of the day, and wishing to wait for the next flood, or for daylight; also for vessels waiting for a wind to enter the Saguenay River.

Anchorage off Saguenay Cliffs.

LARK POINT, the south-western point of entrance of the Saguenay, bears S.W. $\frac{1}{2}$ S. $2\frac{1}{2}$ miles from Point Vaches, and is also of clay cliffs, but much lower than those of Point Vaches. LARK ISLET, small and low, lies off this point 1 mile to the E.N.E. and is joined to it by sand and boulders dry at low water. *Lark Point.* *Lark Islet.*

LARK REEF is of sand and boulders, dry at low water nearly out to the edge of the shoal water, which extends 3 miles in a S.S.E. direction from Lark Point. Between this extensive reef, and those which extend $1\frac{1}{2}$ miles S.E. from Point Vaches, is the entrance of the Saguenay River: but as the navigation of that river is quite distinct from that of the St. Lawrence, I shall reserve it for a future chapter, and have here only mentioned the extensive reefs off its entrance in so far as they are dangers to be avoided by vessels bound up the North channel of the St. Lawrence. *Lark Reef.*

The mark for leading clear of those reefs and of Lark Reef is so distant that it can only be made out in fine weather. It is the western sides of the Brandy Pots and White Islet in one, and open to the southward of Hare Island, bearing S.S.W. $\frac{1}{2}$ W. Running on this mark, a vessel will pass the S.E. extreme of Lark Reef in 6 fathoms, and at the distance of $\frac{3}{4}$ of a mile from the 3 fathoms mark. *Mark for the Saguenay and Lark Reefs.*

CANARD RIVER is a small stream, celebrated for wild ducks, at the western termination of the clay cliffs, $2\frac{1}{2}$ miles S.W. of Lark Point; and can only be approached in a boat near high water. *Canard River.*

The ECHAFAUD is a small, steep, and rocky islet, lying off the mouth of a cove full of rocks, 5 miles S.W. of Lark Point. The Lark Reef terminates close to the south-west ward of the Echafaud, after having trended for 5 miles in a W. by S. direction from its S.E. extreme. *Echafaud Islet.*

CAPE BASQUE is the first mountainous headland S.W. of the Saguenay, bearing S.W. $\frac{1}{2}$ S. $6\frac{1}{2}$ miles from Lark Point. It is quite bold, having 20 fathoms close to it. *Cape Basque.*

BASQUE ROAD, between the cape of the same name and Lark Reef, is a very good anchorage, well sheltered by the reef from easterly winds, and by the mainland from all northerly and westerly winds, as far to the southward as S.W. There is plenty of room for many vessels, but the best berth is with Echafaud Islet, bearing W.N.W. and distant rather less than a mile, *Basque Road.*



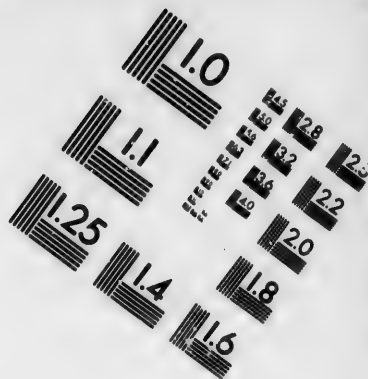
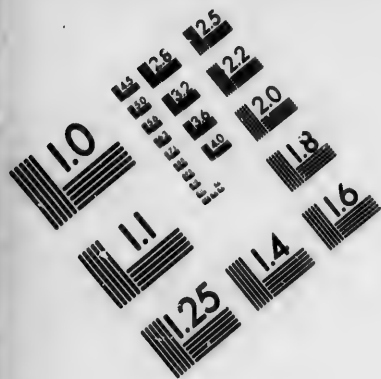
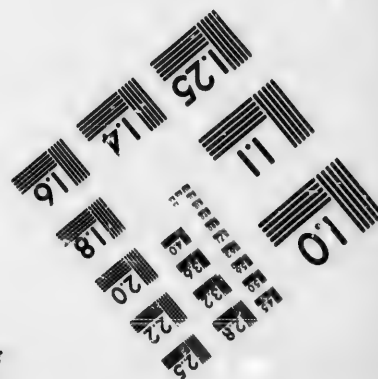
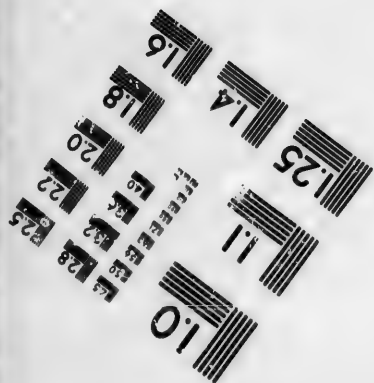
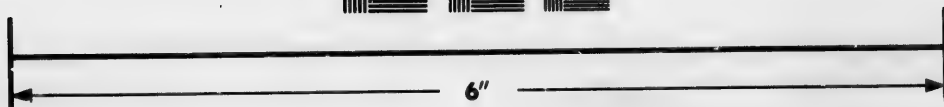
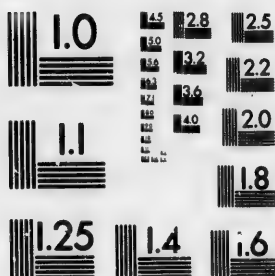


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- Basque Road.* where the vessel will be in 10 or 11 fathoms, with clay bottom, and at the distance of nearly $\frac{1}{4}$ a mile from the 3 fathoms line. Vessels may anchor further out in 13 fathoms; but the further out, the stronger the tide. At the anchorage I have recommended, the tides are not strong, and the holding ground is everywhere very good. There is no anchorage on the north shore to the S.W. of this before we arrive at Murray Bay, a distance of 28 miles.
- Cape Dogs.* CAPE DOGS, $5\frac{1}{2}$ miles S.W. $\frac{3}{4}$ S. from Cape Basque, is quite bold, high, precipitous, and of bare granite. Half way between
- Bay of Rocks.* these capes is the BAY OF ROCKS, having an island and many large rocks in it, as its name implies, and affording shelter only to boats.
- Cape Salmon.* CAPE SALMON is high and bold, like Cape Dogs, from which it bears S.W. $\frac{1}{2}$ S. $9\frac{3}{4}$ miles. Between these capes are Shettle Port, *Shettle Port.* Black River, and Port Parsley; at the distances of $2\frac{1}{2}$, $4\frac{1}{2}$, *Black River.* and $7\frac{1}{2}$ miles respectively from Cape Dogs. They are merely places for boats. *Port Parsley,*
- Cape Eagle.* CAPE EAGLE is $5\frac{1}{2}$ miles S.W. by W. $\frac{1}{2}$ W. from Cape Salmon, and of the same bold, high, and precipitous character. The bay between these capes is a mile deep, but affords no anchorage for shipping, in consequence of the great depth of water. In it is
- Port Salmon.* PORT SALMON, a small cove which large boats can enter at high water, situated about $1\frac{1}{2}$ miles to the westward of Cape Salmon. The settlements on the North shore are beginning to spread to the eastward of this place, and they are continuous from it along the coast to Quebec.
- Murray Bay,* MURRAY BAY, $6\frac{1}{2}$ miles W. by S. from Cape Eagle, is about $1\frac{1}{2}$ miles wide, and nearly as deep; but is all dry at low water, excepting the very shallow channels leading to the river at its
- and River.* head. The river is rapid and unnavigable, flowing down a beautiful valley from two or three small lakes among the hills. There are not many places in Canada that can be justly compared with this for beauty of scenery. There is a church and village round the head of the bay, and the settlements extend some miles back from the St. Lawrence. There are grist and saw mills on the river. At the latter deals are made, and are for the most part shipped to Quebec in small schooners, which lie aground near or in the entrance of the river; occasionally however vessels anchor off, and take in cargoes of lumber.

Slight shocks of earthquakes are not infrequent at Murray Bay, *Murray Bay*, and also at Eboulemens, St. Paul's Bay, and the neighbourhood.

The anchorage is close under the high rocky shore, a little to the eastward of the bay; with Point Gaze, its east point, bearing W. by N. about 400 fathoms; Point Pique, its west point, S.W. $\frac{1}{2}$ W.; and Point Heu, E.N.E. $\frac{1}{2}$ E. The bottom is of clay, good for holding, and the depth 10 or 12 fathoms at the distance of about 300 fathoms from the shore, but not above $\frac{1}{2}$ of a mile from the edge of the shoal water. Vessels here will be out of the strength of the tides, well sheltered from the prevailing winds, and in perfect safety if well moored, although inconveniently near the shore except in the case of a vessel taking in her lading. It is possible to anchor a little further out in 15 or 16 fathoms, but the tides are there very strong.

In running up from the eastward to anchor at Murray Bay, give the shore a berth of $\frac{1}{2}$ of a mile, in order to avoid the shoal water which extends nearly $\frac{1}{2}$ of a mile off shore half way between Cape Eagle and the anchorage. In running down from the westward, keep Cape Sain, the first point westward of Point Pique, just open to the southward of the latter, in order to clear the edge of the shoal water which fills Murray Bay; and when the church bears N.W. you may haul in towards the anchorage.

GOOSE CAPE is bold and rocky, and about $9\frac{1}{2}$ miles S.W. $\frac{1}{2}$ S. from Point Pique, the west point of Murray Bay. At Malbay, and in Little Malbay, between those two points, the shoals dry out $\frac{1}{2}$ of a mile from the shore, but there is no good anchorage.

CAPE MARTIN, the east point of Eboulemens Bay, is 3 miles W. by S. from Goose Cape. The shore between them is very slightly indented, and the shoals dry out about $\frac{1}{2}$ of a mile, that is, nearly to a line joining the two capes. Nearly half way between these, but rather nearer Goose Cape, a stream descends a ravine, and off the mouth of the latter there is a very large boulder stone called Grosse Rock.

The anchorage between Capes Goose and Martin is good, and well sheltered from easterly winds. It must be remembered, however, that the tides will be found rather strong if the vessel be anchored farther out than is recommended, whereas in the proper berth both streams are of moderate strength. When at anchor too far out in $8\frac{1}{2}$ fathoms with only a neap tide, the strength of which was however aided by an easterly wind, we observed the

*Anchorage off
Grosse Rock.*

first of the flood coming round Goose Cape with a great rippling. At first it set slanting on the shore, at the rate of 5 knots, but soon decreased to $3\frac{1}{2}$ knots. About an hour from its commencement the stream increased again to $4\frac{1}{2}$ knots; and after continuing at that rate only for a short time, decreased to $2\frac{1}{2}$ knots, which rate it retained for the remainder of the tide, setting fairly along shore. Further out still, that is in 10 fathoms, the ebb also will be found strong as well as the flood. To avoid these strong tides, anchor in 7 fathoms with Grosse Rock, above mentioned, bearing N. by W., and Cape Corbeau, the east point of St. Paul's Bay, only just shut in behind Cape Martin, bearing W. $\frac{1}{2}$ S. Here you will have good holding ground, and will be about 400 fathoms from the shore at high water, but only half that distance from the 3 fathoms edge of the shoals. Small vessels anchor further to the eastward, close in under Goose Cape, which bears from the anchorage I have recommended E.N.E. $\frac{1}{2}$ E. $1\frac{1}{2}$ miles.

Mount Eboulemens.

Mount Eboulemens is about 3 miles to the northward of that anchorage, and one of the highest summits on the northern shore of the St. Lawrence; being, by our measurements, 2547 feet above the high water in ordinary spring tides.

The east end of Coudres Island bears from Cape Martin, S.W. by S., $2\frac{1}{4}$ miles.

THE NORTH CHANNEL.

BELOW COUDRES ISLAND.

North Channel.

92. The channel to the northward of Red Islet and its bank, and between the latter and the shoals off the Saguenay River, is $3\frac{3}{4}$ miles wide from 3 fathoms to 3 fathoms, and with very deep water between. Further westward the North Channel is much wider, excepting in one place, and even there it is nearly $3\frac{1}{2}$ miles in breadth. Thus between Cape Dogs and Hare Island it is 4 miles wide; between Cape Salmon and the Hare Island Bank it is $3\frac{1}{2}$ miles wide, and this is the narrowest part of the channel. About 5 miles further to the westward, the islands and banks, which divide the river into two channels, cease for a time. Thus between Cape Eagle and the east end of Grande Island Kamourasca there is but one channel, $7\frac{1}{4}$ miles wide; the line from the cape to the east end of the island passing the western extreme of Hare Island Bank in 5 fathoms. The river continues thus clear

from detached shoals, and with deep water from side to side, for a *North Channel*, distance of 6 or 7 miles, or until we arrive opposite Murray Bay, which is opposite to Cape Diable on the south shore, and distant from it $10\frac{1}{2}$ miles. A line drawn from the east point of the bay to that cap will pass over the N.E. extreme of the English Bank in about 11 fathoms, and to the westward of this line the river may be considered as again divided into two channels by the English Bank, although there is water enough over the latter for the largest ships until it joins the Middle Ground about 3 miles below the buoys of the Traverse. The breadth of the St. Lawrence between Goose Cape and Point Ouelle is nearly 8 miles, but the navigable breadth is diminished by the Shoals of St. Anne to 5 miles.

The North Channel from Red Island to Coudres Island has *Bad anchorage*, a depth of water usually exceeding 30, and sometimes 50 fathoms; it therefore affords no anchorages excepting those which I have described in the last article. A vessel however might anchor on the north side of the Hare Island Bank, and the English Bank is common to both channels, but it is only in fine weather that vessels could ride in such exposed situations. In time of need a vessel may also anchor all along the north side of Hare Island, and White Island Reef, but the ground is generally bad, and the vessel, in consequence of the deep water, must be too close in shore for safety, especially in the event of a strong N.W. wind occurring. It is this want of good and convenient anchorages which renders this part of the Northern Channel unfit for general use. In the South Channel, a vessel above Cacona can anchor almost anywhere, or at any time when it may become necessary: but in the north, in the event of its falling calm, she would be left at the mercy of the strong tides, and might be in danger of being set on shore if she were in the neighbourhood of Red Islet or the shoals off the Saguenay. In other respects the North Channel is a fine, wide, and straight channel, entirely unembarrassed by detached shoals, and therefore there seems no reason why it should not be used occasionally when circumstances may render it advantageous to do so; as in the case of scant and strong N.W. winds likely to continue, as they generally are in the fall of the year, and when it would be, for obvious reasons, desirable to keep the north shore on board.

With easterly winds and thick weather, or at night, this channel

North Channel. should never be attempted : for as the leading marks could not then be seen, and the soundings are too deep and irregular to supply the requisite guidance, a vessel would be very likely to meet with a fatal accident under such circumstances. Besides the meeting of the ebb tides down the St. Lawrence and out of the Saguenay, at the rate of 5 or 3 knots, and their opposition to the heavy swell up the estuary in N.E. gales, causes a very heavy breaking sea, which it would be difficult to distinguish from shoal water.

However, supposing the circumstances such as to render it desirable for you to take the North Channel, attend to the following directions.

*Bergeron to
Coudres Island.*

If with a strong N.W. wind you have kept the north shore on board until you have passed the Bergeron Coves, and if night be approaching, and the flood tide nearly done, endeavour to reach the anchorage 2 or 3 miles to the eastward of Point Vaches (see Art. 91), and remain there till daylight. Having sufficient daylight to take you through between Red Islet and the shoals off

With the Ebb,

the Saguenay proceed as follows :—First, with the ebb tide, keep well to windward, running along under the north land at the distance of a mile, until you open Cacona to the westward of Red Islet, bearing S. $\frac{1}{2}$ E. Then steer so as may be necessary to bring the western extremes of the Brandy Pots and White Islet in one, and open to the southward of Hare Island, bearing S.S.W. $\frac{1}{2}$ W. Run upon that leading mark, and it will lead you clear to the southward of all the shoals off the Saguenay. In crossing the mouth of the river you will have very irregular soundings, from 12 to 60 fathoms, but when the lighthouse of Green Island comes on with the west end of Red Islet, you will be off the S.E. extreme of Lark Reef, in 6 fathoms, and three quarters of a mile from its 3 fathoms edge. Continue to run on the same leading mark, with your lead going until the houses at Tadousac open to the westward of Lark Islet, bearing N. by W. You will now be off the south extreme of Lark Reef and will perhaps be able to see a Patch of sand and stone upon it, which never covers. If you have kept the mark on, that patch will be about $1\frac{1}{2}$ miles to the north-westward, you will have deepened your water to nearly 20 fathoms, and may, if you wish, haul up for the anchorage in Basque Road, guiding yourself along the west side of Lark Reef by the soundings in the chart. But if

*Saguenay
Reefs.*

Lark Reef.

*Lark Patch
never covers.*

you wish to continue your course up the river, nothing more is necessary than to keep well under the north shore with the ebb, and more in the middle of the channel with the flood tide, for there is nothing in the way as far up as Coudres Island.

*North Channel.
Bergeron to
Coudres Island.*

Secondly: Coming up, and having past Bergeron with the flood tide, it is not necessary to keep the northern shore quite so close on board. Open Cacona to the westward of Red Islet, as before directed, and then steer so as to open the Brandy Pots to the southward of White Islet, about the breadth of the latter, and bearing S.W. by S. Take care to open the Brandy Pots as directed, because the line of those islands and White Islet touching passes nearly over a rocky patch of $7\frac{1}{2}$ fathoms, which it is well to avoid, although I do not think that there is less water there. The cross marks for that rocky patch are Red Islet on with the S.W. end of Green Island. A vessel running on the leading mark which I have given for the case of the ebb tide passes well inside, or to the northward of it. But to return: having opened the Brandy Pots to the southward of White Islet, keep them so as you run towards them, until Green Island Light-house is well open to the westward of Red Islet, when you may steer directly up the middle of the channel between Hare Island and the north shore. In the event of the wind and tide failing, anchorage will be found on the Hare Island Bank, the English Bank, Murray Bay, and to the westward of Goose Cape.

Rocky Patch.

93. I shall close this chapter with a few brief remarks on the tides, which, with the rate and course of the streams, as shown by the arrows on the plans, the times of high water on the full and change days, and the rise and duration of the tides given in the table at the end of this book, will, I trust, be all that seamen can require on this head.

*Tides between
Green and Cou-
dres Islands.*

The principal stream of flood ascends along the northern side of the estuary. One part of this principal stream sets from below Bergeron towards and over the tail of the Red Island Bank, which it curves round to the southward, and then passes into the North Channel between Red Islet and the White Islet Reef. At the same time an inferior stream of flood ascends along the south shore close outside the Razades, Basque, Apple, and Green Islands; and inside of them also after the shoals are covered. When these two streams of flood meet the last of the ebb, and

Flood.

*Tides between
Green and Coudres
Islands.*

Flood.

afterwards each other, between Green and Red Islands, they cause high breaking rippings, which can be heard at a great distance on a still night, and which appear like broken water on a shoal. Each of these two streams of flood is strongest near its own side, and there is consequently little or no flood in mid-channel, particularly in neap tides and westerly winds. To the westward of Cacona the flood in the South Channel sets fairly up the river on either side of the Barrett Ledges, Middle Shoal, and Middle Bank; but the strongest part of it passes up the deep water to the northward of these shoals, between them and the Brandy Pots and Hare Island; and at the rate of $2\frac{1}{2}$ or 3 knots in spring tides. On arriving at the Hare Island Bank, great part of this stream passes into the North Channel between that bank and Hare Island; the rest over the tail of the bank into the South Channel. The flood sets fairly up the South Channel, and between the Pilgrims and the Hare Island Bank, but becomes very weak above them, especially in neap tides, until we arrive as high as Point Origneaux, whence it gradually increases in strength, being aided by a branch of the northern stream from between the English and Hare Island Banks, until it attains its full rate of 5 knots in the South Traverse.

To return again to the principal stream of flood: another part of it passes between the Red Islet Bank and the shoals off the Saguenay, whilst a third part ascends that river 70 miles to the rapids. When the flood first makes, it meets the ebb down the channel to the northward of Hare Island, and causes a tremendous rippling, extending from the Lark Reef to Red Islet. Above that islet, the stream of flood, after sweeping round to the westward past Rocky Bay, pursues a tolerably fair course up the north channel as high as Cape Eagle, off which it divides: the southern part proceeding to the southward of the English Bank, on its way to the South Traverse; whilst the northern part passes between the English Bank and the north shore up to Goose Cape. Off Goose Cape this northern part of the stream of the flood again divides: one, the lesser and weaker part, passing to the southward of Coudres, throws off at the first of the tide branches to the S.S.W., which pass over the western part of the English Bank, on either side of the Middle Ground, and between the latter and the shoals eastward of the Seal Reefs, into the South Channel. This seems to arise from

the flood being earlier in the North than in the South Channel, and hence the first of the flood comes from the N.N.E. at the Traverse, and sets for about an hour on the shoals of St. Anne and St. Roque. The other and principal part passes between Coudres Island and the north shore, where it attains the same rate of 5 knots in spring tides as in the South Traverse.

*Tides between
Green and Coudres Islands.*

I need add little respecting the ebb tide beyond what has already been said in the course of this chapter, and what the arrows in the plans express. I may however remark generally, that the direction of the ebb stream is always nearly the contrary to that of the flood, excepting between Red and Green Islands, and to the eastward of the former. The principal part of the ebb down the North Channel, being turned to the S.E. by Lark Reef, comes through between White Islet Reef and Red Islet, setting over towards the east end of Green Island at the rate of 5 or 6 knots in spring tides. The ebb out of the Saguenay River is equally strong, and sets over towards the east end of Red Islet Bank, whence, curving to the eastward, it unites with the St. Lawrence ebb, from which it can be readily distinguished by the dark colour of its water, and both together set down the estuary, as has been explained in Art. 15, and other parts of these directions.

Although the duration both of the rise and stream of the tides will be found in the table at the end of this book, yet it may be useful to remark here that the flood and ebb are less unequal in duration in the North than in the South Channel: and that in both channels the streams of flood and ebb upon an average continue $\frac{3}{4}$ and 1 hour respectively after it is high and low water by the shore.

At the Brandy Pots, the flood rises 5h. 50m. and the ebb falls 6h. 34m., so that the ebb by the shore is about $\frac{1}{4}$ of an hour longer than the flood. This inequality of the tides increases as we proceed up the river; thus at Point St. Roque, opposite the South Traverse, the flood is only 5h. 35m. and the ebb 6h. 50m. The times of the high and low water by the shore do not seem to be much affected by winds; but the amount of the rise and fall of the tides, and the duration of the streams, are considerably affected by strong winds; nevertheless, as an approximation near enough for practical purposes, we may state that, when the stream of flood makes in mid-channel, the tide has risen by the shore, at

*Tides between
Green and Cou-
dres Islands.*

the Brandy Pots 1 foot 3 inches, and at the Traverse 2 feet 6 inches ; and also that when the stream of ebb makes, the tide has fallen about 2 feet by the shore. But as it is of importance to know the proportional amount of the rise and fall of the tides for any part of their whole duration, when a large ship is to be taken over certain shallow parts of the river above the Traverse, I shall have occasion to notice this subject again in the following chapter.

CHAPTER XI.

THE SOUTH, MIDDLE, AND NORTH TRAVERSES TO QUEBEC.

94. General description of the South, Middle, and North Channels.—
 95. South Shore from St. Roque to St. Thomas. South Traverse, Light-Vessel, and Buoys. South Bank, Red Buoy, and Shoal Patches in the S.W. part of the South Traverse. Bank of St. Thomas.—96. North Side of the South Traverse, including the Middle Ground and other Shoals. Seal Islands. Pillars. South Rock. Goose Island Reef. Goose and Crane Islands. Beaujeu Bank.—97. Directions, Anchorages, and Tides.—98. The South Shore above the Traverse. Wye Rocks. Berthier. Bellechasse Island and Rock. St. Vallier. Bank of St. Vallier. St. Michel. Beaumont Reefs. Point Levi.—99. Islands and Shoals forming the Northern Side of the South Channel. Crane Island Spit. Margaret's Tail. Grosse Patch and Quarantine Anchorage at Grosse Island. Grosse Island Tail. Banks of Madame, and Madame Reef. Isle of Orleans. Patrick Hole. Basin and Harbour of Quebec.—100. Directions above Crane Island.—101. North Channel. Passage between Coudres Island and the North Shore. Eboulements. St. Paul Bay. Petite Rivière, and the Coast to Cape Tourmente. Coudres Island. Prairie Bay, Prairie Shoal, and Directions for the Anchorage. Shoals forming the South Side of the North Channel, and the Anchorage under the west end of Coudres in easterly winds. Neptune Rock, Burnt Cape Ledge, Brulé Banks. North Traverse, Traverse Spit. Eastern and Western Narrows of the North Traverse, West Sand, with the leading marks. Passage from the Narrows to the South Channel.—102. Directions for the North Channel and Traverse. Tides.—103. Orleans Channel.—104. Table showing the rise and fall of the Tides, with Remarks on them.

94. We have now arrived at the most difficult part of the navigation of the St. Lawrence, where the river becomes divided into three channels by shoals and islands. The eastern entrances of all three of these channels are rendered more or less difficult, either by their narrowness, the want of good anchorage in them, or by the strength of the tides. THE SOUTH CHANNEL lies along *South Channel*, the southern shore, and between it and the shoals and islands occupying the central part of the river from the South Traverse to Quebec. This channel is the only one at present in use, and is preferable to the others for the general purposes of navigation, having excellent anchorage and moderate tides in every part, excepting for a few miles in the Traverse. If this channel were *Inadequately buoyed*, sufficiently buoyed the largest ships might ascend by it to Quebec.

South Channel. at all times of tide; but with no other assistance than the present buoys there will always be danger of ships of the line or very heavy frigates striking on some of the shallow and rocky patches which abound in the Traverse, especially in its western part, about 3 miles below the Pillars. The channel between Beaujeu Bank and Crane Island should also be buoyed for the use of such large ships, for scarcely more than 3 fathoms at low water can be carried through to the southward of that bank where all vessels at present pass. A large ship must wait for the proper time of tide to pass such shallow parts of the channel, by which a fair wind may be lost and much delay occur.

*Beaujeu Bank
also wants
buoying.*

The whole distance, by the South Channel from the light-vessel at the Traverse to Quebec, is 55 miles.

Middle Channel.

THE MIDDLE CHANNEL lies between the shoals and islands which form the northern side of the South Channel and the long line of shoals and reefs which extend from Coudres Island to Reaux Island. In one part of it, near the eastern entrance of the Middle Traverse, there are not more than 3 fathoms at low water. (See Admiralty Plans, sheets 5 and 6.) Having passed this shallow part there is both room and water enough for the largest ships until we arrive at the group of islands between Crane Island and the Isle of Orleans, where the Middle Channel communicates with the South Channel by various narrow passages between the islands. There is plenty of water in most of these passages at all times, but the tides set strongly through them; and, although they might be rendered available in case of necessity, and though it would be possible to take even the largest ships up to Quebec by the Middle Channel, were it requisite from any cause to do so, yet they are too intricate and difficult for general navigation. The other and better channels will always be preferred for general use; but they ought to be known to the pilots in common with every other channel in the river.

The Middle Channel was unknown before our survey. It was probably known to the French, but, if so, their knowledge had been lost; for, even in the most recent of the old charts and directions, the Seal Reefs are represented as extending to Coudres Island, and the islands between Crane Island and the Reaux Island as being joined together by shallow water.

North Channel. THE NORTH CHANNEL stretches along the high northern shore of the river, inside of Coudres Island and of the line of shoals

which extends from the latter to the Neptune Rock and the Burnt *North Channel.* Cape Ledge, and from thence through the North Traverse between the shoals which reach from the Burnt Cape Ledge nearly to Reaux Island, and those which lie off the N.E. end of the Isle of Orleans. From the North Traverse this channel continues between Reaux and Madame Islands on the one side, and the Isle of Orleans on the other, till it unites with the South Channel opposite St. Vallier.

The North Channel, as just described, was formerly in general *Formerly used.* use, but it is now little known to those pilots who have not been required to qualify themselves for taking ships through it. It has been very much misrepresented in former books of directions, wherein the objections to it are, for the most part, either exaggerated or imaginary. If a light were placed on the west point of Prairie Bay, in Coudres Island, and if the North Traverse were properly buoyed and lighted, this channel would be of far easier navigation for large ships than the South Channel; for it is much wider and less embarrassed by shoals in every part, excepting in part of the North Traverse, which is narrow and intricate; but with this great advantage over the South Traverse, that there is good anchorage in every part of it, and tides of comparatively moderate strength; neither is there any want of anchorage in other parts of the North Channel, excepting in the middle of it, where in general the tides will be found too strong. Between Coudres Island and the Main the water is so deep, and the stream so strong, that there is no anchorage excepting in Prairie Bay, which is an excellent roadstead. (See Art. 101.) Above Coudres there is a fine straight channel from $1\frac{1}{2}$ to $2\frac{1}{2}$ miles wide, entirely free from danger, and extending 18 or 19 miles to the Burnt Cape Ledge. The depth of water is not (as has been represented) inconveniently deep anywhere above Coudres; it nowhere exceeds 17 fathoms at low water in mid-channel, and is generally not above 11 or 12 fathoms, shoaling towards the sides of the channel, so as to afford good anchorage out of the strength of the tides. There is, however, much more tide and more sea in this long and open reach of 6 or 7 leagues than in the corresponding parts of the South Channel; and in the fall of the year the N.W. squalls off the mountains are heavy and frequent. Altogether I think the South Channel preferable for the general purposes of navigation; yet the North is a fine channel, and, as it frequently

*Lights and
Buoys wanted.*

remains open, that is, free from ice, some time after the South becomes unnavigable in the fall of the year, it becomes the more requisite to require a full knowledge of it from all pilots in future.

Orleans Channel.

The channel to the northward of the Isle of Orleans has water enough for the largest ships, but is too narrow and intricate for general use.

Having thus generally noticed the three channels into which the St. Lawrence is divided, I shall now proceed to give a particular and full description of that which is in general use; and I shall afterwards notice more fully the North Channel.

SOUTH CHANNEL.

THROUGH THE SOUTH TRAVERSE TO CRANE ISLAND.

South Shore.

95. The south shore of the St. Lawrence, from Point St. Roque to St. Thomas, is low, and of slate, but rises gradually into wooded ridges of considerable elevation at the distance of a few miles back from the river. These ridges are of grey wacke and slate rocks, and are not to be compared in height to the granitic mountains of the north shore opposite, which in some parts exceed 2000 feet above the river. The houses are numerous all along the south shore, and are grouped into villages round the churches of St. Jean, Islet, St. Ignace, and St. Thomas, where

St. Roque, St. Jean, and Islet.

supplies may always be obtained. The churches of St. Roque, St. Jean, and Islet stand low down near the water's edge, and are distant nearly 7 miles from each other, the latter being oppo-

River Jolie and Three Saumons

site to Goose Island Reef. The river Jolie is $2\frac{1}{2}$ miles above or to the westward of the church of St. Jean; and the river Trois Saumons a mile further in the same direction. They both afford

St. Ignace.

shelter to small craft and good landing for boats, excepting at low water, and they have 12 feet water in their entrances at high water, spring tides. The church of St. Ignace is $13\frac{1}{2}$ miles to the westward of that of St. Jean, and stands about three quarters of a mile back from Cape St. Ignace, a small, round, rocky peninsula; which will be easily recognised, and is nearly opposite Macpherson

St. Thomas.

House, on the east end of Crane Island. The church of St. Thomas, which is very large, and stands on the western bank of the River Sud, is $5\frac{1}{2}$ miles to the westward of that of St. Ignace, and nearly

River Sud.

opposite the west end of Crane Island. The River Sud falls

into the St. Lawrence by a cascade of 30 feet just within its entrance, and has mills and a considerable village on its banks.

Shallow water extends out from the shore to considerable distances all the way from St. Roque to St. Thomas, and is generally called the South Bank. The part of this bank which projects 4 miles out from Point St. Roque to the light-vessel at the Traverse, and is known by the name of the Shoals of St. Roque, is extremely dangerous, being composed of a thin covering of sand, mud, and stones, over slate rock. The depth of water in many parts of these shoals does not exceed 9 or 10 feet, as will be seen in the Plans, sheet 5.

THE NARROWS OF THE SOUTH TRAVERSE are between these shoals and the Middle Ground, and only 440 fathoms wide from 3 fathoms to 3 fathoms. The depth of water through the Narrows is from 5 to 14 fathoms. The ebb-tide runs at the springs at the rate of 7 knots, and the flood 5 or 6 knots; and, as the ground is hard, there is no anchorage in the stream. It is there that the light-vessel and two buoys are placed. Their position on the Admiralty Plans is that which they occupied when the survey was made; but they are not every year in the same position, neither would it be easy to place them so in such a tide-way, and without sufficient marks for the purpose; yet it is very desirable that they should always be in the same place exactly, and they might be so placed with the assistance of a beacon or two erected on the shore for the purpose, together with angles by a sextant. We have always found them so nearly in the position marked in the Plans as to answer the purpose of guiding a vessel through the channel between them, but not so that they could be safely made too free with; for in some years they were a cable's length within the 3-fathoms edge of the bank, and in others 200 or 300 fathoms S.W. or N.E. of the position they occupied the year before. Hence they could never be trusted as leading marks, in one with each other or any other object.

The light-vessel is moored in 3 or 4 fathoms on the N.E. point of the Shoals of St. Roque, nearly in the line from St. Roque Church to the N.E. end of Coudres Island: the former bearing S.S.E. $\frac{1}{2}$ E. $4\frac{1}{2}$ miles, and the latter being distant $4\frac{1}{2}$ miles.

The Black Buoy, also on the St. Roque Shoals, lies between $\frac{1}{2}$ and 1 mile S.W. from the light-vessel, in from $2\frac{1}{2}$ to 3 fathoms of water, with St. Roque Church in one with a road behind it, bearing

South Traverses. S.E. $\frac{1}{2}$ S.; and the northernmost part of the highlands of Kamourasca just open to the northward of Cape Origneaux, bearing E.N.E.

The White Buoy is moored in the same depth of water, on the edge of the Middle Ground, which there forms the north side of the channel, 500 fathoms from the Black Buoy, and on the same line of bearing from St. Roque Church. But, by the directions of Mr. Lambly, the harbour-master, this buoy should be placed with the Black Buoy bearing S.E. by E.; with the road behind St. Roque open to the westward of the church, three times the breadth of the latter; with the second mountain or summit of the high land of Kamourasca in one with Cape Origneaux or with Point St. Denis; and with the Wood Pillar open its own breadth to the southward of Goose Island. But the Wood Pillar and Goose Island are in reality touching, and will appear so in certain states of the atmosphere, or if the observer be elevated.

Mark leading to Narrows.

There is no mark for leading through the Narrows; and that which leads up to them from the eastward, viz. Cape Origneaux and the high land of Kamourasca (see view (K) on sheet 5), can only be made out in clear weather. The western leading mark given in the old directions, that is, the Wood Pillar just touching the south point of Goose Island, must never be trusted. This mark will not lead through; and, moreover, Goose Island is so distant that more or less of it becomes invisible according to the state of the weather or the atmosphere. On the weather-tide, however, the channel is pretty well marked out by the rougher or breaking sea in the deep water, as compared with the smoother surface over the shoals on either side.

Channel Patch.

The edge of the South Bank above the Narrows is not quite so steep or shoal, but it has many outlying patches of from $2\frac{1}{2}$ to 3 fathoms off it, which render it difficult to run a very large vessel safely along it by the lead, excepting within two hours on either side of the time of high water by the shore. One of these small patches, with 3 fathoms least water, and which I have distinguished by the name of CHANNEL PATCH, lies directly in the way of vessels, and in the deepest part of the channel. The marks for the Channel Patch are the north sides of the Goose Island Reef and of the Stone Pillar in one, bearing S.W. $\frac{1}{2}$ W.; the latter being distant $2\frac{1}{2}$ miles. The north side of Goose Island (including the islets close off it) and the south side of the Wood Pillar in one,

bearing S.W. by W. $\frac{1}{2}$ W. Notre Dame, or Eboulemens Church *South Traverse. Channel Patch.* and the low N.E. point of Coudres Island in one (only to be made out in favourable weather), and bearing N. by E. $\frac{1}{2}$ E. And, lastly, St. Jean Church S.E. $\frac{1}{2}$ S. $2\frac{1}{2}$ miles. A buoy should be placed upon the Channel Patch, and then vessels might pass on either side of it in deep water; or a beacon should be erected behind St. Jean Church, so as to be in one with it from the Patch, and to serve as a cross mark.

The Red Buoy of the Traverse, as shown in the Admiralty *Red Buoy of the Traverse.* Plans, sheet 5, bears N. $\frac{1}{2}$ E. 3 miles from the church of St. Jean; but it seems to be laid down by no rule, since I have known it to differ in position nearly $1\frac{1}{2}$ miles in different years. The shape of the edge of the South Bank having been unknown before our survey, it has always been placed in a bight, and has consequently been of little use to large ships. It ought to be placed $1\frac{1}{2}$ miles further out, on the same line of bearing from the church of St. Jean, and with the church of St. Roque bearing E. $\frac{1}{2}$ N.: it would then be in $2\frac{1}{2}$ fathoms, on the outer S.W. point of the Shoals of St. Roque, and 4 miles to the southward of the Black Buoy at the Narrows. The Red Buoy so placed, and another on the Channel Patch, would enable the largest ships to pass safely through the South Traverse at any time of tide.

Off St. Thomas the South Bank is rather more than two miles *Bank of St. Thomas.* broad, and is there called the BANK OF ST. THOMAS; it consists of sand, mud, and stones, and is dry at low water nearly to its northern edge, which is very steep; and the marks for clearing it are Bellechase Island and Point St. Vallier touching. Therefore the whole of the island should never be opened out clear to the northward of the point; but these marks can only be made out in very favourable weather.

96. The northern side of the South Traverse is formed of shoals *North Side of South Traverse.* from the N.E. end of the Middle Ground to the Seal Islands and the Pillars, a distance of 13 miles: for, although there are some 3-fathoms passages between the Middle Ground and the shoals to the westward of it, and also between the Seal Islands and the Pillars, yet they are neither used nor required for the general purposes of navigation; and those last named are so narrow as to be almost unnavigable.

The MIDDLE GROUND extends nearly 3 miles to the N.E. of the *Middle Ground.* White Buoy of the Traverse; and there is as little as 3 feet of

South Traverse. water, at low spring tides, on this eastern part of the shoal, which is of sand and slate rock. To the S.W. of the White Buoy, in which direction the Middle Ground, including two detached patches, extends $1\frac{1}{2}$ miles, there is not less than $2\frac{1}{2}$ fathoms.

Western Shoals of Middle Ground. On the shoals to the westward of the Middle Ground there is as little as $1\frac{1}{2}$ fathoms; and the slate rock dries in patches more than 3 miles out to the N.E. of the Seal Islands. The outline of these shoals is extremely irregular, and there are several detached shoals to the southward of them, with 2 to 3 fathoms, as will be seen in the Plan. There are no marks for leading clear of them, and the soundings are too irregular to be a sufficient guide; hence the northern side of the Traverse is rendered dangerous, and should not be made too free with, especially in a large vessel.

Seal Islands. THE SEAL ISLANDS consist of sand upon slate; they are small and very low, partly covered with grass and a very few bushes. They are occasionally visited by the "habitans" for seals, marsh hay, and wild fowl, in their seasons. A vessel can only approach near to them by way of the Middle Traverse, where she may lie within half a mile of their N.W. side.

Wood Pillar. THE PILLARS are two small and steep islets of greywacke rock, neither of them exceeding 200 fathoms in diameter. THE WOOD PILLAR has trees upon it, and is the highest and steepest of the two; its height is estimated at 100 feet above high-water mark. It lies $2\frac{1}{2}$ miles S. by E. from the Seal Islands, and 2 miles N.E. from Goose Island. A shoal extends from the N.E. point of the latter to it, and continues $2\frac{1}{2}$ miles further to the N.E.

Stone Pillar. THE STONE PILLAR lies $1\frac{1}{2}$ miles to the east of the Wood Pillar, and is quite bare of trees. Shoal-water extends from it a mile to the N.E. There is a half-tide rock, called the Middle Rock, between the Pillars, and a passage too intricate for any but small vessels.

South Rock. THE SOUTH ROCK, a quarter of a mile S.E. by S. from the S.E. point of the Stone Pillar, is of slate rock, about 50 fathoms in diameter, dry soon after half-ebb, and bold all round. This rock lies much in the way of vessels, and at night, or when it is covered, becomes very dangerous. The passage between it and the Pillar is too narrow for use, but the marks for clearing it to the southward are, to keep the whole of Crane Island open to the southward of the Goose Island Reef.

Goose Island Reef.

GOOSE ISLAND REEF is composed of a long chain of rocks,

commencing $1\frac{1}{2}$ miles S.W. of the Stone Pillar, and extending *South Traverse.* $3\frac{1}{2}$ miles in that direction, or parallel to the course of the river. The central part of this reef, nearly $1\frac{1}{2}$ miles long, is formed of large and high rocks always above water, and to be seen from a great distance. There is a narrow channel, only fit for small craft, between it and the N.E. end of Goose Island, to which it lies parallel, at the distance of a long half-mile. It is bold to the southward, on which side vessels may safely approach it to the distance of 200 fathoms.

GOOSE ISLAND is $4\frac{1}{2}$ miles long, partly composed of rocky and *Goose Island.* hilly ground, and partly of meadow-land. The eastern part, $2\frac{1}{2}$ miles long, is the highest, and about 150 or 200 feet high. On the shoals which dry out from the island at low water, on its south side, lies the Hospital Rock, out of the way of vessels, *Hospital Rock.* but serving to point out one of the few places in the St. Lawrence where vessels could be laid on shore in case of necessity—for instance, to winter safe from the ice. In that part of the Bay, between Goose and Crane Islands, which is included between the distances of half a mile and 2 miles to the S.W. of the Hospital Rock, the bottom is fit for that purpose, being of mud, dry at low water.

CRANE ISLAND is joined to Goose Island by meadows, and *Crane Island.* distant from its nearest point about $2\frac{1}{2}$ miles. It is $3\frac{1}{2}$ miles long, and not quite so high as Goose Island. Macpherson House and other buildings will be easily recognised near its N.E. end; and there is a village with a church on the north side of the island, but the church cannot be seen from the eastward. The island rises into a ridge of greywacke and slate immediately to the S.W. of Macpherson; and all its S.W. part is thickly wooded. The meadows of Goose and Crane Islands feed great numbers of cattle; they can be seen over from the deck of a vessel; and the mountains of the north shore thus seen, together with the islands themselves, form one of the finest views in the St. Lawrence.

BEAUJEU BANK is a narrow shoal of sand and gravel over *Beaujeu Bank.* slate. It is 2 miles long, parallel to the course of the river, and has not more than 8 feet at low water over some parts of it. Its west end approaches to within less than half a mile of Crane Island at Macpherson House, from which it bears S.S.E. $\frac{1}{2}$ E., being directly in the line from the house to Cape St. Ignace. The channel to the southward of Beaujeu Bank is that which

South Traverse. is at present used by vessels; the depth in it is irregular, varying from 5 to 3 fathoms; and there are two rocky patches of 2½ fathoms in the way, and difficult to avoid; so that the latter depth is all that can be carried through there without buoys at low spring tides, unless the vessel be conducted by an unusually skilful pilot, in which case 3 fathoms might be reckoned upon.

The marks for passing the southern edge of Beaujeu Bank, along the eastern half of its length, are the Stone Pillar, its own breadth open to the southward of Goose Island Reef; and for the western part of the bank, which turns up slightly to the northward towards Crane Island, Point St. Vallier in one with the south side of Crane Island.

The channel to the northward of Beaujeu Bank is 2 miles long, half a mile wide at its eastern entrance, and 9 or 10 fathoms deep. The depth decreases to 4½ fathoms in the western entrance, which is only 220 fathoms wide from 3 fathoms to 3 fathoms. A buoy on each side of this narrow entrance would render this channel available at all times; but without buoys it would be difficult to take a large ship through it, because in coming up the river it is necessary to haul to the southward through the narrow western entrance, to avoid a shoal extending 300 fathoms from the high-water mark of Crane Island. The east end of that shoal, in 3 fathoms, bears S. ½ E. from Macpherson House, and west 220 fathoms from the west end of Beaujeu Bank.

Further westward, the south side of Crane Island is so bold that it may be approached to within 200 fathoms; and the channel between it and the Bank of St. Thomas is three quarters of a mile wide, and free from danger.

Fair wind requisite for South Traverse.

97. Ships of large draught of water, of the line, or heavy frigates, should not attempt the South Traverse without a settled fair wind; for, although it might be possible to back and fill through the Narrows in the day-time, and with fine weather, yet it would be attended with so much risk that it should never be attempted excepting in a case of urgent necessity. They should also choose their time of tide, so as to have water enough to pass over the patches of shallow water mentioned in Art. 95, and in the preceding pages, at least until something shall have been done, by buoy or otherwise, to render the passing by them more certain and easy than it is at present. The rise and fall of the tide, for every hour after low and high water, will be seen in the table at the end

of this Chapter, and from it the depth of water, at any time, over *South Traverse*, any shallow part of the river, may easily be deduced. Moreover, *Difficult at night*, such large ships should not run through the Traverse at night, especially if the weather be bad, and so dark that the buoys and the land cannot be seen: for, although the bearings of the Light and the lead might enable a skilful and experienced pilot to take such ships safely through on the last half of the stream of flood, yet it would be a heavy charge, and attended with some risk. It is *Or with ebb*, desirable for vessels in general coming up the river, even with a fair wind, to pass the Traverse on the flood-tide; for the ebb is so strong between the buoys, that little progress will be made against it, even with a strong breeze.

DIRECTIONS FOR SOUTH TRAVERSE.

A vessel coming up the river with a fair wind, and having arrived off the St. Anne Buoy, in from 7 to 10 fathoms, as directed at the close of Art. 90, should proceed as follows:—The Light-vessel will bear S.W. by W. nearly 5 miles; but the course to be steered will vary on either side of that bearing, according to the tide. The first of the flood will set to the southward, towards the Shoals of St. Roque, and the ebb in the contrary direction; you must therefore be guided by the bearing of the Light, but more especially by the soundings in the Plan. Keep the southern side of the channel on board, but do not go into less than from 7 to 10 fathoms, according to the time of tide, until up to the Light, lest you get into the shallow Inlet in the Shoals of St. Roque, which runs in to the southward of the Light-vessel and Black Buoy. *Shallow Inlet in St. Roque Shoals.* Steer S.W. by W. as you pass the Light-vessel, leaving her to the southward, and at the distance of one or two cables. Run past her about a quarter of a mile, and then steer S.W., or as may be requisite, from wind and tide, to pass midway between the buoys, from whence the course to the Stone Pillar is S.W. $\frac{1}{4}$ S. But here too the course alone must not be trusted, for there is no calculating exactly the set of the tides. Generally you will have to steer a little to the southward of S.W. $\frac{1}{4}$ S. with the flood-tide, to keep along the edge of the South Bank; and with the ebb, a little to the westward: but the lead is the only sure guide. As soon as you are past the two buoys haul gradually to the southward, so as to bring the Light-vessel to bear between N.E. and N.E. $\frac{1}{4}$ N., or till you approach the southern side of the channel to 5 fathoms at

South Traverse. low water, or to a depth corresponding to that at other times of the tide. See Art. 104. When you are 3 miles past the Light you

Directions.
Middle Ground Patches. will have passed the S.W. Patches of the Middle Ground, and consequently will have more room. Take now 6 fathoms at low water, or a depth corresponding to it at other times of the tide, as a guide along the edge of the South Bank, keeping the Light bearing about N.E. $\frac{1}{2}$ N., and taking care not to cross to the northward of the line of deep water (9 to 13 fathoms), which extends south-westward from the Narrows all through the Traverse.

Channel Patch, Eastern Passage. On arriving near the Channel Patch, if it be more than half-flood, there will be water enough over it for the largest ship; and the other patches to the eastward of it will be avoided by not going to the southward into less water than I have directed. But if it be thought that there is not water enough over the Channel Patch, you may pass to the eastward of it by proceeding as follows:—Run up along the edge of the South Bank in the depth before directed, until St. Jean Church bears S.S.E.; then open the south side of the Goose Island Reef only just sufficiently to be seen nearly in one with the south side of the Stone Pillar. Haul up upon those marks, keeping them in one till St. Jean Church bears S.E. $\frac{1}{2}$ S., when the Channel Patch will be about 150 fathoms to the northward of you; and you may haul again to the southward into the depth of 6 fathoms at low water, as before, until the South Rock is past, remembering that the marks for clearing it are the whole of Crane Island open to the southward of the Goose Island Reef.

South Rock.
Channel Patch, Western Passage. To pass to the westward of the Channel Patch bring St. Jean Church to bear S.S.E. as before; then haul to the westward until the whole of the Goose Island Reef is distinctly open to the westward of the Stone Pillar. Run upon these marks until St. Jean Church bears S.E., when you will have passed close to the westward of the Patch, and must haul immediately to the southward, towards Port Jolie, to avoid the shoal water which extends N.E. from the Pillar. Continue to run in that direction until you are far enough to insure clearing the South Rock, as before directed. You will now be through the Traverse, and will have little difficulty in running the remainder of the distance to Crane Island in the day-time; but you must remember that there will not be water enough to the southward of Beaujeu Bank until after half-flood for a very large ship. However, in order to clear

Beaujeu Bank and run up to the southward of it in the deepest water, proceed as follows:—As soon as you are a mile or two past the Goose Island Reef, steer so as to bring the Stone Pillar its own breadth open to the southward of the Goose Island Reef, bearing N.E. $\frac{1}{2}$ E.; and run from these leading marks, steering about S.W. $\frac{1}{2}$ W., or so as to keep them open, as just described, till St. Ignace Church bears S. $\frac{1}{2}$ W.; then haul a little to the southward so as to open the Pillar rather more than its own breadth to the southward of the Goose Island Reef, and you will deepen your water to 4 fathoms at low water. Run up from these marks, keeping them as last described, till Point St. Vallier opens to the southward of Crane Island about a quarter of a point, bearing W.S.W.; then haul up for Point St. Vallier, keeping it so open until Macpherson House, on Crane Island, bears N.N.W., when you will be past the west end of Beaujeu Bank, and may keep away a little to the southward, running along the southern shore of Crane Island, in from 7 to 10 fathoms according to the time of tide.

*South Traverse.
Directions.
Beaujeu Bank,
Southern Passage.*

In passing through the channel to the northward of Beaujeu Bank, buoys would be absolutely necessary for the guidance of a large ship, but the following directions may be useful to vessels of smaller size:—As soon as you are above the Hospital Rock, or west end of Goose Island, bring the south sides of the Goose Island Reef and Stone Pillar in one, and run from and upon this mark until the N.E. end of the high-water beach of Crane Island and the N.E. end of Onion Island come in one, bearing north; then haul to the southward immediately, keeping the last-named marks on till Point St. Vallier opens out to the southward of the S.W. point of Crane Island, when you will be outside the bank and may haul to the westward. Onion Island is in the Middle Traverse, and will be seen over the meadows of Crane Island; but the high-water beach at the N.E. end of Crane Island is often difficult to make out on account of reeds.

*Beaujeu Bank,
Northern Passage.*

In the night-time Beaujeu Bank must be passed by the lead, along the edge of the South Bank, or southern side of the channel, keeping in 3 fathoms at low-water, or a depth corresponding to it at other times of the tide, till Macpherson House bears N.N.W., when you must haul up for the west end of Crane Island.

Coming up with beating winds, tack by the lead in 6 fathoms

With beating winds.

South Traverse. on the south side of the channel below the Light-vessel, but go no nearer than 10 fathoms to the Middle Ground, which is very steep. In passing the Narrows you will observe the water rough in the channel, or even breaking with a strong breeze against the tide, while it is comparatively smooth upon the shoals on either side. This circumstance, the lead, and the bearing of the buoys, must guide you in the very short boards which you must make through the Narrows. Keep more over towards the south than the opposite side of the channel, especially in light winds, for the St. Roque Shoal is less steep than the Middle Ground, and therefore affords better warning by the lead, and a better chance of bringing up with an anchor in case of necessity; and in no other case should anchoring there be attempted. In the event of its falling suddenly calm, boats a-head will generally enable you to keep the channel till the tide shall have carried you into a situation where you may more safely anchor. When above the Middle Ground you will have more room to work in, and may stand to the southward into 5 fathoms at low water; but in the board to the northward you should tack at the first shoal cast of the lead after passing the line of deep water (9 to 13 fathoms), which extends from the Narrows towards the Pillars, and which is generally shown by rougher water than there is elsewhere. Beware of the South Rock and in standing towards it at night from the South Bank, tack at the first cast of deep water, that is 10 or 11 fathoms. Nine fathoms is near enough to the Goose Island Reef by day, and 10 fathoms by night. Tack at the former depth all along Goose Island, taking care not to get to the northward of Beaujeu Bank, along the southern edge of which you may tack when you see the marks given in Art. 96 for its southern edge coming on. In the night there is no other guide for beating past Beaujeu Bank but the lead; and you must tack from the edge of the South Bank in 3 fathoms at low water, or a depth corresponding to it at other times of the tide, making short boards towards Beaujeu Bank, which must be approached with great caution, since its southern side is extremely steep, having from 4 to 5 fathoms at low water close to it. In beating through between Crane Island and the Bank of St. Thomas remember that the latter is extremely steep. The helm should be put down at the first indication of a less depth than 5 fathoms at low water. See also the leading marks, Art. 95. A good sailing vessel with

Through Narrows.

Above Middle Ground.

South Rock.

Goose Island Reef.

Beaujeu Bank.

St. Thomas Bank.

a moderate breeze will beat from St. Anne Buoy to Crane Island in one spring-tide; but in neap-tides she probably would not get far above Islet Church.

ANCHORAGES IN SOUTH TRAVERSE.

Vessels may anchor off the St. Anne Shoals in 6 fathoms low water, up to within a mile or two of the Light-vessel. The ground is better, and there is less tide than on the tail of the Middle Ground; but the latter is the better position for weighing with the first of the flood in northerly winds. Vessels do occasionally anchor for a tide, in fine weather, on the edge of the Bank of St. Roque, a mile or two above the Black Buoy; but this cannot be recommended, for the ebb-tide runs there at the rate of $6\frac{1}{2}$ knots, and the ground is not to be depended on; hence, if the anchor once started, it would be difficult to bring up again, and there would be great danger of losing the anchor. Should the wind begin to fail, or the flood be done, it would be better to run down below the Light-vessel than to anchor anywhere at a less distance than 3 miles above the buoys. Vessels often anchor off the Red Buoy of the Traverse, in 6 or 7 fathoms in good ground, but the anchorage is not reckoned very good until we arrive above St. Jean Church. All along the edge of the South Bank, from opposite the Pillars to Crane Island, the holding ground is a stiff clay, and so good that it is sometimes difficult to weigh an anchor. Off Crane Island, half a mile or more above Beaujeu Bank, in 6 or 7 fathoms at low water, there is excellent anchorage in westerly winds; and under the west end of the island, in 5 fathoms, there is equally good anchorage with winds from the eastward. Vessels bound down, and meeting a strong easterly wind anywhere above the Light-vessel, had better run back to this anchorage.

TIDES.

The flood begins much earlier in the North Channel than in the South, and the first of the stream therefore comes from the northward, setting at first about S.S.W. upon the Shoals of St. Anne and St. Roque, but inclining gradually more to the westward, until at a quarter flood it sets fair to the S.W. between the black and white buoys of the South Traverse. After half-flood it sets S.W. by W., and towards the end of the tide still more to the westward; perhaps because, the time of high-water being some-

South Traverse. what earlier in the North Channel, the water has begun to fall before the flood has quite ceased in the South.

Ebb Stream. The ebb-stream sets nearly in the contrary direction to the flood, as just stated; the first of the ebb setting off from the Shoals of St. Anne and St. Roque, through the channels to the westward of the Middle Ground, and over the tail of the latter to the N.N.E.

Tides in the Narrows.

Above the Pillars both tides set fairly up and down the river. In the Narrows of the South Traverse, the rate of the ebb is from 6 to 7 knots, and that of the flood from 5 to 6 knots. The rates of the flood and ebb tides decrease gradually as we proceed to the westward until off the Pillars; they are $3\frac{1}{2}$ and 3 knots respectively, a rate which they retain as far up as Crane Island.

THE SOUTH CHANNEL,

ABOVE THE TRAVERSE.

SOUTH SHORE, FROM ST. THOMAS TO POINT LEVI.

Point St. Thomas.

98. Point St. Thomas is low, and 3 miles W. $\frac{1}{2}$ N. from the entrance of the River Sud.

Wye Rocks.

THE WYE ROCKS lie three quarters of a mile north from Point St. Thomas, and are separated from the western part of the Bank of St. Thomas by a channel nearly a quarter of a mile wide and 4 fathoms deep. They form a narrow ridge 400 fathoms long in a S.W. direction, and have 4 feet least water at their western end.

The marks for these rocks, which are out of the way of vessels with a fair wind, are the SEMINAIRE on the north shore in one with the east point of Reaux Island, and Crow Island just open to the westward of Middle Island.

The clearing mark is Bellechasse Island and Point St. Vallier touching; this leads about two cables to the northward of the rocks, and also along the northern edge of the Bank of St. Thomas, in 4 fathoms.

Berthier.

BERTHIER Church and Village are $5\frac{1}{2}$ miles S.W. $\frac{1}{2}$ W. from Point St. Thomas. The intermediate shore is rocky and rather low, with shoal water extending off it a third of a mile.

Trou de Berthier.

THE TROU DE BERTHIER, a tide harbour for the river craft, and dry at low-water, is close to the eastward of the church.

Bellechasse

BELLECHASSE ISLAND, of high steep and bare greywackè rocks, is 300 fathoms long, parallel to the shore, from which it is distant 560 fathoms. The west point of the island bears W. by N.

a mile from Berthier Church, and not more than $2\frac{1}{2}$ fathoms *South Channel*, can be carried through between the island and the main. North from the centre of the island, and at the distance of 110 fathoms, lies a small pointed rock, nearly dry at low-water, and with from *Pointed Rock*, 4 to 6 fathoms between it and the island. Within the island to the S.W. is a shallow bay, and the small river Bellechasse.

POINT ST. VALLIER, $2\frac{1}{2}$ miles W. $\frac{1}{2}$ S. from Berthier Church, *Pt. St. Vallier*, is remarkable as being higher than any other point below it on the south shore, above the Traverse. The church and village of St. Vallier stand low down on the shore of the shoal bay between Points St. Michel and St. Vallier; and 2 miles S.W. by W. from the extremity of the latter. A stone mill stands on the ridge in rear of the church, and the small river Boyer enters the *River Boyer*, bay $1\frac{1}{2}$ miles to the westward of St. Vallier.

POINT ST. MICHEL is very low, and $3\frac{1}{2}$ miles W. by S. from *Pt. St. Michel*, Point St. Vallier. Reefs of slate, dry at low-water, extend a considerable distance to the N.E. from both these points, but especially from the latter.

THE BANK OF ST. VALLIER fills the whole bay between them, *St. Vallier Bank*, and extends nearly three quarters of a mile to the N.E. from Point St. Michel. The eastern leading marks for clearing the Bank of St. Vallier are Berthier East Point, just open to the southward of Bellechasse Island, and the lead also gives sufficient warning. The western leading marks are Beaumont Church just open to the northward of Point Durantaye, the west point of St. Michel Bay.

The Village and Church of St. Michel stand on the shore of the *St. Michel*, bay, nearly 2 miles W. by S. from the point of the same name. At Point Durantaye, a mile to the westward of the church, the *Pt. Durantaye*, shoal water extends only 100 fathoms off shore.

THE BEAUMONT REEFS commence from Point Durantaye, *Beaumont Reefs*, extending more and more from the shore as we proceed to the westward, until opposite Point St. Lawrence, on the Isle of Orleans, their northern edge, in 3 fathoms, is nearly three quarters of a mile off shore. Their extent out from the shore diminishes as we proceed further to the westward, and they may be considered to cease about a mile to the westward of Roys Mill, the shoal water there reaching only 130 fathoms from the shore. These shoals are rocky, and dry in part at low water; and their northern edge is steep with very deep water close to it. The warning by the

South Channel. lead is insufficient in a vessel going fast, and therefore these shoals should be approached with great caution. The mark for their northern edge, in three fathoms, as far westward as Beaumont Mill, is Points Durantaye and St. Michel in one, and bearing E.N.E. $\frac{1}{4}$ E. And to the westward of Beaumont Mills the mark is St. Joseph Church, Point Levi, in one with Point Martiniere; these last marks clear the western part of the shoals, as will be seen in the Plans, sheet 7.

Beaumont.

BEAUMONT CHURCH and BEAUMONT MILL are 5 miles W.S.W. of St. Michel. The church stands on the high and steep banks of the river, which extend several miles on either side of it, and the mills low down at the foot of the bank. Roys Mill, where there is a water-fall, also stands low down, near the water's edge, and a mile to the westward of Beaumont Mill.

Point Levi.

ST. JOSEPH CHURCH, on POINT LEVI, bears W. by N., and is distant $6\frac{1}{2}$ miles from Beaumont Church, and the shoal water nowhere extends beyond a quarter of a mile from the shore between Point Levi and Roys Mill. Off Point Levi a reef extends 180 fathoms to the northward, and should not be approached nearer than 10 fathoms from between the north and west, or 7 fathoms from between the north and east. On the N.W. extreme of this reef, St. Joseph Church is in one with the eastern side of a small rocky Mound near the water's edge, bearing about S.E. by S., and Points Pavilion and St. Pierre, on the N.W. side of Orleans Isle, are in one.

Reef.

THE SOUTH CHANNEL,

ABOVE THE TRAVERSE.

ISLANDS AND SHOALS FORMING ITS NORTHERN SIDE.

*Islands between
Crane and
Grosse Islands.*

99. The islands in order westward of Crane Island, as will be seen in the Plans, sheet 7, and in the enlarged Plan of the Traverses, are Haystack, Mill, Race, Middle, Margaret, Cliff, and Grosse Islands. There are several other farther to the northward, but they are in the Middle Traverse. All these islands are of greywackè rock, more or less steep, partially wooded, and the highest not exceeding 200 feet above the sea.

*Intricate passes
into Middle
Traverse.*

Between these islands there are narrow and intricate passes, leading into the Middle Traverse, and with water enough for the largest vessels; but as they are of little or no use for the com-

mon purposes of navigation, I shall not swell these remarks by *South Channel.* attempting a particular written description, which must of necessity fail of affording the same degree of useful information as that given in the Admiralty Plans.

To the westward of Grosse Isle are Reaux and Madame *Madame and Reaux Islands.* Islands, of slate rock, low, wooded, and connected by reefs of slate nearly dry at low water. The S.W. point of Madame Island is nearly 11 miles W. by S. from Crane Island, and opposite Bellechasse Island, from which it is distant $2\frac{1}{2}$ miles. Extending from almost all these islands there are reefs of slate rock, thinly covered with sand and mud, and bounding the South Channel on its northern side for nearly 14 miles to the westward of Crane Island.

CRANE ISLAND SPIT is the first of these reefs, extending *Crane Island Spit.* $1\frac{1}{2}$ miles W. by S. from Crane Island, and with 9 feet least water. There are no leading marks for the southern side of this Spit, and therefore a vessel standing towards it should take care not to bring the south side of Crane Island to bear so far to the eastward as E. by N., and to tack at the first cast of the lead showing less than 5 fathoms at low water.

The channel between Crane Island Spit and Margaret Island, into the Middle Traverse, is half a mile wide, and more than 12 fathoms deep. The ebb tide sets strongly to the N.E. through this channel, and between the islands into the Middle Traverse; thus causing a powerful indraught, which should be guarded against in beating down the river, especially in light winds, and with a heavy or slow working vessel.

MARGARETS TAIL, extending a mile to the S. W. from Mar- *Margarets Tail.* garet and Cliff Islands, which are nearly joined at low water, is a very dangerous shoal, the slate being awash in some parts of it in low tides. The mark for its southern edge in 4 fathoms is, the south side of Haystack Island and Crane Island Church in one, bearing E.N.E.

GROSSE PATCH is a narrow rocky shoal, 600 fathoms long in *Grosse Patch.* a S. W. direction, and with 7 feet least water: it lies to the west of Margarets Tail, and the channel between them is 270 fathoms wide, and 5 fathoms deep. There is also a channel to the westward of Grosse Patch, between it and Grosse Island Tail, and which, if a buoy were placed on the west end of the Patch, might be conveniently used in westerly winds. Both these

South Channel. Grosse Island quarantine establishment and anchorage. channels lead to the anchorage off the Quarantine Establishment on the southern side of Grosse Island. The vessels generally lie between the Patch and island, to be near the establishment; but the anchorage further eastward and to the northward of Margaret Island is by far preferable. All merchant vessels, as the law now stands, are obliged to anchor off Grosse Island, from whence, after examination, they are allowed to proceed to Quebec, if not detained at the quarantine anchorage. These vessels in the first

Roadstead near Grosse Island. instance generally anchor outside Grosse Patch, and to the westward of Margarets Tail, choosing their berth in 5 fathoms, where there is one of the best roadsteads for riding out an easterly gale in the river. For the guidance of the numerous vessels which stop there, a red buoy has been placed on the S. W. end of

Margarets Tail buoy, & Grosse Patch buoy. Margarets Tail, and a white buoy on the N. E. end of Grosse Patch; but, in the absence of the buoys, the east points of Grosse Island and the Brothers in one, bearing N. by E., will lead through the channel between them; whence a vessel may either haul to the eastward between Grosse and Cliffe Islands, or to the westward between the Grosse Patch and Grosse Island, as may be preferred.

Quarantine rock with buoy. In the latter case care must be taken to avoid a small rock with 7 feet least water, on which a black buoy has been placed. This rock lies 280 fathoms N. W. by W. from the white buoy at the N. E. end of the Grosse Patch; and about 180 fathoms off the shore of Grosse Island at high water. The inner anchorage at Grosse Island is not otherwise useful than as a place for vessels to ride quarantine: but the anchorage outside the Grosse Patch is a convenient place for which vessels, on the approach of a strong easterly wind, may bear up, when there is not tide enough for them to reach the anchorage under Crane Island, 4 miles further to the eastward.

Grosse Island Tail. GROSSE ISLAND TAIL, consists of sand, and extends nearly $1\frac{1}{2}$ miles S. W. from Grosse Island. The passage between this shoal and the eastern part of the banks of Madame is less than 2 cables wide and $3\frac{1}{2}$ fathoms deep; it leads (after passing between Reaux and Grosse Islands) into the Middle Traverse. The leading mark for the entrance of this passage is two-thirds of Patience Island open to the northward of Grosse Island, as in the view F on the enlarged plan of the North and Middle Traverses, and the cross mark for it, and also for clearing the S. W. end of Grosse Island Tail, is St. François Church (on the Isle of Orleans), in one with

the S.W. point of Reaux Island, as in the view E on the same *South Channel* plan.

THE BANKS OF MADAME, in their eastern part, extend $1\frac{1}{2}$ miles *Madame Banks*. to the southward of Reaux Island; and the mark for their S.E. extreme in $2\frac{1}{2}$ fathoms is, the south side of Two Heads Island just open to the southward of Grosse Island, as shown by the view C on the enlarged plan. The mark for clearing the southern side of these banks, as well as the Grosse Island Tail and Patch is, Race Island kept just open to the southward of Margaret Island. The banks of Madame extend three quarters of a mile to the southward of Madame Island, and also beyond it to the S.W. $2\frac{1}{2}$ miles. This western end of the banks has a large patch of slate rock, dry *Madame Reef*. at low water, near its S.W. extreme, and is commonly called MADAME REEF. The mark for its S.W. extreme is the north side of Reaux Island just open to the northward of Madame Island, bearing N.E. $\frac{3}{4}$ E.; and St. Vallier Church bearing S. $\frac{1}{4}$ E. The cross mark for clearing it to the S.W. is Berthier Church, and the west end of Bellechasse Island in one.

THE ISLE OF ORLEANS is of greywackè and slate rocks, dipping generally at a high angle to the S.E. It is 18 miles long, with an extreme breadth of $4\frac{1}{2}$ miles. This beautiful and fertile island forms a county, is divided into 5 parishes, has a good road all round it, and rises gradually from generally steep banks, to the central elevation, estimated at 350 or 400 feet above the water. The southern shore of Orleans forms the northern side of the South Channel, from opposite Madame Reef to within 3 miles of Quebec, a distance of nearly 14 miles. The Church of *St. John*. St. John stands low and close to the water, on the point of Orleans of the same name, 2 miles west from the Madame Reef, and $1\frac{1}{2}$ miles from Point St. Michel, on the opposite south shore. At the distance of 2 and 3 miles respectively, above St. John, are the small rivers Lafleur and Macheux, off which there is a good *Macheux Road*. anchoring road in 7 or 8 fathoms; and in their mouths small schooners and boats find shelter, but lie aground at low water.

St. Lawrence Church also stands low, and close to the water, *St. Lawrence*. near the point of the same name, and 6 miles W.S.W. of St. John. Around both these churches there are villages; and along the shore between them, as well as on the bank above, the houses are numerous.

The slate rocks dry out to a considerable distance all along this

South Channel. part of the island, but the shallow water in no part extends beyond
Orleans Isle. a quarter of a mile from the shore.

Patrick Hole. PATRICK HOLE is a small shallow bay, $1\frac{1}{2}$ miles to the westward of St. Lawrence Church. A small brook enters the head of the bay; and off it, in from 6 to 9 fathoms, there is good anchorage, well sheltered from easterly winds. Here vessels bound

Patrick Road. down the river frequently anchor for a short time previous to their final departure for sea. On the high ground, about half a mile to

Telegraphs. the westward of Patrick Hole, stands the Telegraph No. 2. During the last war the telegraph stations formed a complete chain of communication as low as Green Island, but at the time of our survey they had been discontinued and taken down, with the exception of No. 2. They have since been re-established as far down as Grosse Island for the purpose of communicating with the quarantine establishment.

The west end of Orleans Isle is about $4\frac{1}{2}$ miles W. by N. from Patrick Hole: there is a wharf and a group of houses upon it, and it is quite bold. In the bay, a mile to the eastward of it, lie the

Marand Rocks. MARAND ROCKS, always covered; but they are out of the fairway, and within 3 fathoms' line, which there extends a quarter of a mile from the shore at high water.

Orleans, west end anchorage. Under the west end of Orleans, in from 8 to 15 fathoms, there is a good place for a vessel arriving with an easterly wind to anchor, which she ought to do, and wait for daylight rather than risk running among the crowd of shipping off Quebec in a dark night and rapid tide-way.

Quebec Basin. THE BASIN AND HARBOUR OF QUEBEC are shown on so ample a scale in one of the Admiralty plans, that a laboured written description becomes unnecessary. The basin is 3 miles long from the west end of Orleans to the India wharf at Quebec, and about $1\frac{1}{2}$ miles wide from Point Levi across to the shore of Beauport.

Beauport Bank. Off the Beauport shore a bank of slate, thinly covered with mud, and great part of which is dry at low water, extends more than a mile from the shore. The Observation Bastion, in one with the Martello Tower in St. John's suburb, marks the southern edge of this bank, from opposite the west end of Orleans to within half a mile of the India wharf. But a stranger would not easily make out the bastion, which ought to be distinguished by a white mark. The breadth of the channel between this bank and the shoal off Point Levi is 600 fathoms, and the depth of water nearly 30

fathoms. The water is so deep in the basin that there is no good anchorage, excepting under Orleans, as I have mentioned, and off the mouth of the River St. Charles. *Quebec Basin.*

It is difficult to imagine anything more strikingly beautiful than the view which suddenly bursts upon a stranger ascending the St. Lawrence and entering the Basin of Quebec, as the vessel opens out the Falls of Montmorenci on the one hand and the city of Quebec on the other.

The harbour may be considered as extending from off the river St. Charles up to the Chaudiere river, a distance of 5 or 6 miles, which all through the navigable season is thickly occupied by vessels employed in the timber trade, for the most part lying alongside of the numerous wharfs and blocks for embarking lumber, and consequently out of the stream. *Quebec Harbour.*

But sometimes the spring or fall fleet arrives to the amount of several hundred sail together; and then, before they have had time to take their places for loading, the river is so crowded with shipping that it is difficult to find a clear berth. A gale of wind, occurring under such circumstances, is sure to do damage, since the water is deep, the ground (sand and gravel) not good, the tide strong, and the vessels often carelessly anchored.

A great annoyance to vessels at anchor off Quebec, are the large and heavy rafts of timber so frequently dropping down with the strong ebb-tide. These often get athwart hawse of vessels, and are almost certain to do them injury, either by forcing them from their anchorage or otherwise. *Timber rafts.*

The breadth of the St. Lawrence at Quebec is very little more than half a mile, but it expands, immediately above the city, to $1\frac{1}{2}$ miles. The depth amounts to 28 fathoms at low water abreast the city, and to 20 fathoms in the wide part above—the deepest water being over towards the Point Levi shore. The best anchorage is on the Quebec side, in from 11 to 17 fathoms; there being nothing in the way excepting an old wreck, with 9 fathoms over it, but by hooking which, many anchors have been lost. The position of this wreck is shown by a rippling in the ebb tide, and also in the plan of the harbour. Above the city, from off Diamond Harbour all along the Bank of Lamouche nearly to Point Pizeau, the anchorage is much better than off it, the depth of water being much less and the ground good. The mark for clearing the outer or southern side of the Bank of Lamouche *Lamouche Bank.*

Quebec Harbour.

along its whole extent, is the N.W. sides of Point Levi and Orleans in one.

Lamouche Channel.

There is a narrow channel with from 3 to 4 fathoms at low water, which commences just to the westward of Diamond Harbour, and runs up within the Bank of Lamouche to some distance above Wolfe's Cove. In this is the most secure anchorage at Quebec, and the only place, if any, where a vessel could safely winter afloat. I am, however, not aware that the experiment has ever been made of wintering a vessel of large draught of water afloat anywhere about Quebec, although it has been successfully tried in the place I have mentioned, in the case of steamers drawing so little water that they could be hauled within the blocks or isolated wharfs. The small craft belonging to Quebec winter in the Cul de Sac, and in the mouth of the river St. Charles, being hauled aground for the purpose. In the former of these places two or three vessels of the size of a sloop of war might be secured from the ice, which closes the navigation of the St. Lawrence from about the 25th November to the 1st May. Sometimes, although rarely, the navigation closes by the middle of November, and remains closed to the 8th or 10th of May; at others it would be possible to navigate it till near Christmas, and ships have arrived in the middle of April; but these are extraordinary seasons, and the period first named is that during which the navigation usually remains closed. The river seldom or never freezes across below Quebec, and only occasionally opposite the city; but it is full of heavy ice, moving up and down with the tides with irresistible force. There is generally, but not always, a bridge of packed ice formed 5 or 6 miles above Quebec; and higher up, as far as Lake Ontario, the St. Lawrence is everywhere frozen across, excepting in places where the current is very strong.

Cul de Sac.

Ice stops the navigation.

All necessary information respecting the tides, latitude, longitude, variation, the height of the city and citadel, &c., will be found in the Admiralty Plan, and in the table at the end of these directions.

Quebec Port.

The Port of Quebec extends from Barnaby Island to the first Rapid above Montreal; and a book containing the bye-laws and harbour regulations of the Trinity Board is delivered to each vessel on her arrival, by the harbour-master. The pilots are obliged to give all due information respecting quarantine to the commanders of vessels when they first come aboard.

DIRECTIONS ABOVE CRANE ISLAND.

100. There is so little difficulty in the navigation from Crane Island to Quebec that scarcely any further direction will be requisite beyond that which may be gathered from the foregoing description and remarks, read with reference to the Admiralty Plans, which they are intended to accompany and explain. *South Channel directions.*

With a fair wind vessels run up at night without hesitation, unless it be too dark to see the land, and even beat up in fine weather. With a fair wind in the day-time, and with the assistance of the Admiralty Plans, and these directions, any seaman of common intelligence might take a large ship up through this part of the river. *With fair wind.*

From mid-channel between the west end of Crane Island and the Bank of St. Thomas, to midway between Point St. Michel and St. John's Church in the Isle of Orleans, the course is W.S.W. $\frac{1}{2}$ W., and distance 15 miles. In this interval the channel is clear, direct, and from $1\frac{1}{4}$ to 2 miles wide; so that, even at night, with the land in sight, and the lead going, there cannot be any difficulty. As soon as it is ascertained beyond doubt that the vessel is above the Madame Reef, haul gradually over towards the Orleans side, sufficiently to avoid the Bank of St. Vallier, and then steer for Point St. Lawrence, and keep it on board to avoid the Beaumont Reefs. Under the circumstances which I am supposing, of a night not too dark to distinguish objects, you will see St. Lawrence church, off which, and all round the point to the eastward, the shoal-water extends to the distance of 180 fathoms from the high-water mark, the edge of the shoal being very bold. Give the point a berth of a third of a mile, or do not go nearer than 10 fathoms. *St. Vallier Bank.*
St. Lawrence Shoal off Orleans Isle.

The whole distance from the west end of Crane Island to Point St. Lawrence is 21 miles, and the course W.S.W. $\frac{1}{2}$ W. From off Point St. Lawrence to Point Levi the course and distance are W. $\frac{1}{2}$ N. $7\frac{1}{2}$ miles; and from the latter to Quebec S.W. about 2 miles.

The shore of Orleans should be kept on board after passing Point St. Lawrence. If it be blowing fresh from the eastward, it will be advisable to bring up off Patrick Hole till daylight, or under the west end of Orleans, rather than risk running among the crowd of shipping in the night. In running up in the night

South Channel. a good look out should always be kept for vessels, of which there are often many bound down and lying at anchor, in various parts of the river, but especially under Crane Island and off Patrick Hole. When St Joseph Church on Point Levi bears about S.E. by S. it will be in one with the eastern side of the Mound or small hillock at the water's edge, and you will be then off the N.W. extreme of the reef. To the westward of the reef the Point Levi shore becomes quite bold. Go no nearer to that reef or to the Beauport Shoals than 10 fathoms, and that with caution, for they are very steep.

With beating winds.

With beating winds, the leading marks which have been given for the shoals on either side, and which will also be seen in the plans, together with the soundings, will show when to tack. In passing between Point St. Lawrence and the Beaumont Reefs, which is the narrowest part of the channel, and only 600 fathoms wide, some caution will be necessary: attend to the leading marks, and go no nearer to the shoals than 10 fathoms.

Anchorage.

Besides the best places for riding with easterly winds, there is anchorage almost everywhere between Crane Island and Quebec. The best ground for holding is generally on the northern side of the channel, and one of the best places in strong westerly winds is under Point St. John, Orleans Isle.

Tides.

The tides are regular and not very strong below the Beaumont Reefs, seldom exceeding the rate of $2\frac{1}{2}$ knots; but in the narrow channel and deep water (nearly 20 fathoms) between these shoals and Orleans the rate of the ebb sometimes amounts to 4 knots; above the shoals the rate of the tide is from $2\frac{1}{2}$ to 3 knots, increasing again as we enter the Basin of Quebec. Ships, therefore, running up with the flood, and before a strong easterly wind, should be careful to shorten sail in time, and to give the reef off Point Levi a good berth, as they haul gradually round it through the Basin, and to the S.W. towards Quebec.

Between Quebec and Point Levi, in very strong spring tides, assisted by a strong wind, the flood will run at the rate of nearly $4\frac{1}{2}$ miles per hour; and the ebb, in the spring, just after the melting of the winter snow, 5 miles; but, under common circumstances, $3\frac{1}{2}$ and 4 knots respectively are the usual rates of the tides. A good range of cable should always be ready, for it is not easy at times to bring a vessel up off Quebec, especially in the deep water and loose ground in the centre of the channel.

NORTH CHANNEL, AND COUDRES ISLAND.

101. It does not appear to me to be requisite or useful to enter *Middle Channel too intricate.* into any further account of the Middle Channel beyond the general and comparative view of it given in Art. 94. I have stated that it is too intricate and difficult for general navigation, but that nevertheless it would be possible to take even the largest ship through it, choosing of course the proper time of tide, and placing buoys where requisite. It is, however, not easy to imagine the circumstances which could render it necessary to use this channel; but should such a contingency ever occur, the Admiralty Plans would be of more use than many pages of written directions.

The North Channel does, however, require some further notice; *North Channel.* for although it cannot be generally used without buoys, and a light at night, of which it does not seem necessary to incur the expense while the South Channel answers as well or better for the general purposes of navigation; yet there may easily occur cases, *of*, for instance, when the South Channel is obstructed by ice, in which it may be of importance to have more precise information respecting so fine a channel than will be found in the general and comparative description of it in Art. 94.

The entrance to the North Channel, between the reef which *Entrance North of Coudres I.* extends a mile to the E.N.E. from the N.E. end of Coudres, and the shoals which stretch across Eboulemens Bay, is $1\frac{1}{2}$ miles wide, and nearly 30 fathoms deep. The narrowest part of the channel between Coudres and the Main is 860 fathoms wide, between the shoal off the west point of Prairie Bay and the opposite side near Cape Corbeau. The leading mark for this part of the passage, as well as for clearing the shoal on the west side of Point St. Joseph, on the main land side, is Cape Martin *St. Joseph Shoal.* and Goose Cape in one. There is a large settlement at Eboulemens, both on the high grounds around the church of Notre Dame and also on the shores of the bay. Small craft lie aground on the mud in this bay within the large boulders on the edge of the shoals. *Eboulemens.*

ST. PAULS BAY, between Cape Corbeau and Cape Labaie, is *St. Pauls Bay.* nearly opposite to the west end of Coudres and is shoal and dry at low water, excepting a very narrow shallow channel into the River du Goufre, the entrance of which forms a secure tide- *River Goufre.*

North Channel. harbour for small schooners. There is a church (St. Pierre), bridge, and village a mile up the river. Off Cape Corbeau, at half-ebb, the spring tides run at the rate of 7 knots, causing a great and whirling ripple dangerous to boats in bad weather.

Cape Corbeau tides.

Petite Riviere. The church and settlement of PETITE RIVIERE is 7 miles S.W. of St. Pauls Bay; and stands on a narrow strip of low alluvial land at the foot of the granitic hills. The low land is fast diminishing by the action of the tides, obliging the people to cultivate the higher ground in their rear.

Labaie Bank. Shoals of mud and large boulders extend three quarters of a mile off Cape Labaie, and continue of equal extent off Petite Riviere. Their edge will be cleared by keeping the extreme western capes Rouge and Gribanne open to the southward of Cape Maillard. The anchorage is very good along the edge of the shoals off Petite Riviere, where, in 5 fathoms, clay bottom, vessels will be out of the strength of the tides, and well sheltered from westerly winds by Cape Maillard, which is 3 miles to the S.W. of the Church of Petite Riviere. Abattis is a landing-place $1\frac{1}{2}$ miles S.W. of Cape Maillard; and at the Sault au Cochon, 2 miles further S.W. the shoals, which line the shore all the way from St. Pauls Bay, cease. The large boulders on these shoals prevent landing or approach to the shore in boats until after half-flood. There is only one landing-place between Abattis and Cape Tourmente, a distance of nearly 11 miles. This landing is at Gribanne, where a couple of boats might be hauled up. To the westward of the Sault au Cochon the mountainous and uninhabited coast is quite bold, the high and precipitous capes, of various granitic rocks, being washed by the river as far as Cape Tourmente, where the Seminaire Bank commences, and the mountains tend to the N.W. away from the shore.

Abattis.

Gribanne landing place.

Coudres Island. COUDRES ISLAND, the largest island below Quebec, excepting Orleans, is 6 miles long, $2\frac{1}{2}$ miles wide, and by estimation nowhere above 250 feet above the sea. It is composed of grey-wackè and slate rocks, is tolerably fertile, forms a parish by itself, and has a church standing low down near its S.W. extreme. It has as many inhabitants as it can support, having been settled at a very early period. The southern side of the island is lined with rocky shoals which extend fully a mile out from the shore, as they do also off its N.E. point; but the north side of the island is bold for about 2 miles to the eastward of Prairie Bay.

PRAIRIE BAY is on the north side of Coudres Island, and near its centre; Cape Aigle, the east point of the Bay, being 3 miles to the westward of the east end of the island. The Bay is $1\frac{1}{2}$ miles wide, from Cape Aigle to Point Prairie, is not deep, only slightly curved, and shews a sandy beach at high water. Off Point Prairie, its west point, a shoal, the greater part of which is of mud and grass resting on slate, and only covered at high water, extends 620 fathoms to the N.W. from high-water mark, sheltering the Bay from S.W. winds. The line of Notre Dame Church in one with the N.E. end of the low clay cliff of Point St. Joseph, passes 100 fathoms within the 3 fathoms north extreme of this shoal; but if the church be kept on with the N.W. end of the same cliff, it will lead clear of the shoal in deep water. The cross mark for the north point of the shoal is St. Pierre Church and the east side of St. Pauls Bay in one.

Goose Cape shelters Prairie Bay from easterly gales, and prevents any sea of consequence from rolling in, so that this anchorage is perfectly safe in all winds; the ground, of clay, being good for holding, and the tides easy if the vessel be not anchored too far out. There is room for many vessels, the space to anchor in being almost a mile long and about a third of a mile wide, reckoning from 3 fathoms mark to 10 fathoms, beyond which the water deepens rapidly, and the tides are of great strength. The best berth is in 6 fathoms, near the centre of the Bay, where the tides are not nearly so strong as at Quebec, and where we have rode out a gale from the eastward (so heavy as to do great damage to the shipping off that city) with ease and safety. Ships meeting with an easterly wind below the Traverse will find this a good anchorage to run for and should proceed as follows:—Being below the Middle Ground, stand over towards Eboulemens, going no nearer to the reef off the N.E. end of Coudres Island than 10 fathoms. Having passed the reef and opened out the channel, bear up along the shore of Coudres, passing close to Cape Aigle into the anchorage. Approaching this anchorage from the westward, bring the leading marks on for clearing the reef off Point Prairie, viz. Notre Dame Church on with or open to the northward of the N.W. extreme of the clay cliff of Point St. Joseph. Run upon these marks until St. Pierre Church is shut in behind the east side of St. Pauls Bay, when you may haul to the southward into the anchorage.

*North Channel.
Prairie Bay.*

*North Channel,
Prairie Bay
Tides.*

In *Prairie Bay* the flood-tide by the shore is longer than the ebb, the water flowing for 6 h. 20 m., and ebbing only 6 h. 0 m., which is contrary to our observations in every other part of the river. The stream of flood at the anchorage in 6 fathoms, was stronger than that of the ebb, and about 4 knots in spring tides. The stream of the ebb is turned off in great measure by the Shoal of Point *Prairie*. Its rate for the first two hours of the tide is about two knots. It then slacks for about five or six minutes so completely, that a vessel will swing to the wind. After this the stream becomes stronger and regular during the remainder of the tide, its rate being about $3\frac{1}{2}$ knots in spring tides. Vessels should moor at *Prairie*, or at least have a kedge out to insure keeping a clear anchor. The anchorage under *Coudres* in easterly winds is very good, the best riding being in 7 fathoms, and with the south point of *Coudres* bearing between E. and E. by N.

Coudres Bank. The southern side of the channel from *Coudres Island* to *Burnt Cape Ledge* is formed by *Coudres Bank*, and by an unbroken line of shoals, the northern edge of which is of sand, and so nearly straight that it may easily be followed by the lead. The soundings approaching it are such as to give good warning, and vessels may anchor in fine weather all along that side in 6 or 7 fathoms, clay bottom, and out of the strength of the tides.

Neptune Rock. NEPTUNE ROCK is nearly 15 miles to the S.W. of *Coudres*, and about 600 fathoms within, or to the southward of the edge of the shoals. It is always above water and easily recognised.

Burnt Cape Ledge. BURNT CAPE LEDGE is an extensive chain of greywackè and slate rocks, the southwestern part of which is always above water. The S.W. end of this Ledge is $4\frac{1}{2}$ miles S.W. from the *Neptune Rock*, and nearly opposite to *Cape Brulè* on the north shore, from which it is distant $1\frac{1}{2}$ miles.

Brulè Bank. THE BRULÈ BANKS are sands that dry in part soon after half-ebb, and that lie to the westward of *Burnt Cape Ledge*, to which they are joined by shoal water. The channel between these banks and the north shore is 600 fathoms wide, and from 7 to 10 fathoms deep. This is the only channel, but between the north-eastern part of the *Brulè Banks* and *Burnt Cape Ledge* there is a "Cul de Sac" in the banks, which must be avoided by keeping the north shore on board, after arriving off the eastern part of the Ledge. On the N.E. point of the *Brulè Banks*, in 3

*Brulè Cul de
Sac.*

fathoms, the west end of the Burnt Cape Ledge is in one with *North Channel*. the east side of Herol Island, bearing S.E.

THE EASTERN NARROWS OF THE NORTH TRAVERSE, between *North Traverse*. the S.W. extreme of the Brulè Banks and the N.E. extreme of *Eastern Nar-* the Traverse Spit, are $3\frac{1}{2}$ miles S.W. by W. $\frac{1}{2}$ W. from the west *rows*. end of the Burnt Cape Ledge, and $1\frac{1}{2}$ miles S. from Cape Tourmente. Great part of the Traverse Spit, as well as the Brulè *Traverse Spit*. Banks, dry soon after half-ebb, and thereby greatly lessen the difficulty of the passage. The Horse Shoe, and another sand, *Horse Shoe*. lie to the N.W. of the Traverse Spit, the whole resting on an extensive reef of slate, running out from the N.E. end of Orleans.

Four fathoms can be carried through the Eastern Narrows, but the passage is only 250 fathoms wide from 3 fathoms to 3 fathoms; and as the leading marks can only be made out in fine weather, and by experienced eyes, it would require buoying to render it safe for large vessels. The cross-mark for the eastern entrance of this passage, and for clearing the N.E. extreme of the Traverse Spit, is the S.W. point of Two Heads Island on with a distant blue hill bearing S.E. by E. $\frac{1}{4}$ E. as shown in the view A on the enlarged Plan of the Traverses, the N.E. point of Margaret Island being at the same time just open to the westward of Two Heads Island. The mark for leading through the Narrows into the Traverse is the S.W. point of Reaux Island and Point St. Vallier in one, bearing S.S.W. $\frac{1}{4}$ W., as in the view B on the same Plan. From the Eastern Narrows the channel runs S.W. by W. close along the southern edge of the Traverse Spit, leaving all other shoals to the southward. At the distance of $2\frac{1}{2}$ miles we come to the WESTERN NARROWS, of the same *Western Nar-* breadth as before (250 fathoms), $4\frac{1}{2}$ fathoms deep, and between *rows*. the Traverse Spit and the WEST SAND, which is $1\frac{1}{2}$ miles long, *West Sand*. and with 7 feet least water. On the east end of the West Sand Berthier Church is just shut in behind the S.W. point of Reaux Island bearing S. $\frac{1}{2}$ W. Patience Island and Two Heads Island are touching, E. $\frac{1}{2}$ S., and the mark for leading clear of this sand, at the distance of 200 fathoms to the N.E., is Reaux and Grosse Islands touching, S.E. by E. The west end of the same sand is cleared by the line of St. Joachim Church and the east end of Orleans in one. The leading mark to the westward, through the Western Narrows, after having arrived as far as the east end of the West Sand, are Points St. John and Dauphin in one,

RIVER ST. LAWRENCE.

North Channel and Traverse. bearing S.W. $\frac{1}{2}$ W. Having cleared the Western Narrows there is a fine clear passage between Orleans and the Banks of Madame, not less than two-thirds of a mile wide, and with good anchorage all the way to the South Channel at Point St. John, a distance of nearly 7 miles. On the south side of Orleans St. François Church will be seen $1\frac{1}{2}$ miles from the N.E. end of the island, and the River Dauphin, affording shelter to boats, $2\frac{1}{2}$ miles further to the S.W.

DIRECTIONS FOR NORTH CHANNEL.

- Directions passing Coudres.* 102. To sail up the North Channel attend to the following directions:—Observing the leading marks already given, there will be no difficulty in passing between Coudres Island and the Main. When St. Pierre Church opens out to the westward of the eastern side of St. Pauls Bay, you will be up to the north extreme of Prairie Shoal, and when the small islet at the west end of Coudres opens out to the westward of Cape Branche, you will be past it, and may haul to the S.W. up the channel. If you wish to keep the shore of Coudres on board, give Cape Branche a berth of half a mile in passing, or go no nearer than 10 fathoms, and that with due caution, for the bank will be found extremely steep until you are opposite the west end of the island. After passing Coudres you may approach the edge of the bank to 7 fathoms, as far up as the Neptune Rock. If on the contrary you wish to keep the mainland on board, remember to keep the extremes of the capes to the westward open to the southward of Cape Maillard, in order to clear the shoal off Cape Labaie, and also as far westward as Petite Riviere. Further westward, as off Cape Maillard, where the shoal extends 600 fathoms off shore, you must be guided by the lead, going no nearer than 8 fathoms, till you are past the Sault au Cochon, after which the shore becomes quite bold. Keep the north shore well on board after passing Cape Gribanne to avoid the N.E. point of the Brulè Banks, and when you are up to Cape Brulè, or have brought the west end of the Burnt Cape Ledge to bear E.S.E. you must look out for the mark (the S.W. point of Reaux Island and Point St. Vallier) for leading through the Eastern Narrows of the North Traverse. If you cannot make out Point St. Vallier haul over to the Brulè Bank, cautiously, and with the lead going. If the tide be not too high, the sands will be dry,
- Above Coudres.*
- Labaiie Bank.*
- Brulè Banks.*
- North Traverse.*
- Eastern Narrows.*

which will greatly assist you. Run along the northern edge of the Brulé Bank, in the depth answering to 4 fathoms at low water, until the cross-mark A, shown in the enlarged Plan of the Traverse, and described in page 307, comes on. Then steer S.S.W. $\frac{1}{2}$ W. for the S.W. point of Reaux Island; but if you still cannot make out Point St. Vallier, take care to pass to the southward of the Traverse Spit, by keeping on the south side of the channel, running for that purpose in not more than $3\frac{1}{2}$ fathoms at low water, or a corresponding depth at other times of the tide. This you will easily be able to do, because the Brulé Bank is here not near so steep as it is further to the eastward. When the east points of Patience Island and the Brothers come in one, bearing S.E. by E. $\frac{1}{2}$ E., or when you have run a little more than half a mile towards the S.W. point of Reaux Island, from the time when the cross-mark A came on, you will be through the Eastern Narrows, and must haul up S.W. by W. for St. François Church on Orleans Isle, or along the south side of the Traverse Spit, in 4 fathoms at low water. Observe, now, when the clearing mark for the east end of the West Sand comes on, (viz. Reaux and Grosse Islands touching, and bearing S.E. by E.) you will then be about 200 fathoms to the eastward of the Sand; and, to insure passing to the northward of it, you must keep the Traverse Spit on-board, in no more than 4 fathoms, until Point St. John (which will be the extreme point of Orleans) comes in one with Point Dauphin, bearing S.W. $\frac{1}{2}$ W. Run through the Western Narrows, keeping Point St. John just in sight, until St. Vallier Church opens out to the westward of Madame Island, or if that cannot be made out, until St. Joachim Church disappears behind the N.E. end of Orleans, then haul more to the southward and you will be through the Narrows. The channel is then clear and wide the rest of the way to the South Channel at Point St. John. Besides the Western Narrows there is an inferior channel between the West and Centre Sands, as wide as the Western Narrows, but only $3\frac{1}{2}$, or, at most, $3\frac{1}{2}$ fathoms deep. Point St. Vallier kept just shut in behind the N.E. point of Madame Island, bearing S.S.W., will lead through it; but for this, and another still narrower channel to the southward of the Centre Sand, I must refer to the enlarged Admiralty Plan of the North Traverse.

*North Traverse.
Directions.
Eastern Narrows.*

West Sand.

Western Narrows.

West Sand Passage.

Centre Sand Passage.

*North Tra-
verse.
Directions.
From the west-
ward.*

To run through the North Traverse from the westward, enter the Western Narrows with St. Vallièr Church open to the westward of Madame Island, and steer from thence until Point St. John becomes only just open to the southward of Point Dauphin. Then steer N.E. $\frac{1}{2}$ E., or so as to keep the last-named marks on until the N.E. point of Patience Island comes on with the S.W. point of Two Heads Island, bearing E. $\frac{1}{2}$ S. Then haul more to the eastward, so as to run along the southern side of the Traverse Spit by the lead. In doing this the course will be about N.E. by E. $\frac{1}{2}$ E., and the Burnt Cape Ledge will appear a little on the larboard bow. In coming down you will of course have taken notice of Point St. Vallièr, and will now be able to distinguish it. Bring it in one with the S.W. point of Reaux Island, and run through the Eastern Narrows with this leading mark on. If you cannot make out Point St. Vallièr you must keep the Traverse Spit on board until the cross mark A, on the enlarged plan, comes on, or until you deepen the water to more than 5 fathoms at low water, when you will be through the Narrows, and may haul over towards the north shore, and pursue your course down the channel.

The North Traverse is narrow and difficult, and a stranger would hardly at first sight be able to make out Point St. Vallièr, or the islands used as the leading marks; neither could they be made out by any one in hazy weather. The pilots, however, to whom every object in the river is familiar, might easily make themselves acquainted with those marks, so as to be able to take a ship through, in clear weather, when required. But to render the North Traverse safe for large ships, or for general use, two buoys at the Eastern Narrows, and one on the N.E. extreme of the West Sand, would be requisite. With these buoys the channel would be perfectly safe and easy at all times of the tide.

Buoys wanted.

*Tides in North
Traverse.*

The tides set fairly through the North Traverse, seldom exceeding the rate of $3\frac{1}{2}$ or at the utmost 4 knots in spring tides. The accession of the stream from the northward of Orleans, and the comparative narrowness of the channel, increases the rate to from 4 to 5 knots off Cape Brulè, below which it decreases, until we arrive below Cape Maillard. Below Petite Rivière, the ebb, receiving a great accession from the Middle Channel, especially during the first quarter of the tide, runs with great

rapidity; the usual rate being 6 knots in spring tides. In extra-ordinary high tides, assisted by winds, the ebb has been known to run full 7 knots, and the flood 6 knots, between Coudres and the Main: which is as strong as between the buoys of the South Traverse. In gales of wind opposed to those rapid tides, there is a high, boiling, and breaking sea, exceedingly dangerous to boats.

103. THE ORLEANS CHANNEL, between the Island of Orleans and the north shore, being in several places not above 100 fathoms wide, is too narrow and intricate for written directions to be of any use, especially as there are no leading marks. With a fair wind and the assistance of buoys 4 fathoms can be carried through this channel, which lies between shoals of mud and slate extending to a great distance from the shore on either side, and nearly all dry at low water. The greater part of the shoals are visible for an hour or two on either side of low water, and the water is always rougher in the stream than on the shoals, especially during the weather tide: these circumstances enable the river craft occasionally to use this channel, and steamers of light draught of water have also several times passed through it. The shoals cause the landing for boats to be extremely bad excepting at high water, and the only good tide harbour in the channel for the river craft and for boats is the River St. Anne, 6 or 7 miles westward of Cape Tourmente.

The Seminaire, which has been mentioned as one of the leading marks for the Wye Rock in the South Channel, is a large building with a tinued cupola and cross, standing on a rising ground not far from the water, and 3 miles westward of Cape Tourmente. The church and village of St. Joachim, one of the leading marks for the West Sand, is $1\frac{1}{2}$ miles to the westward of the Seminaire. The other churches and villages on the north shore, in order westward, and from 4 to 5 miles apart, are St. Anne, Chateau Richet, and Ange Gardien: the last being 24 miles from the Falls of Montmorency.

On the Orleans side the church and village of St. Famille stands near the shore 7 or 8 miles from the N.E. end of the island: and St. Pierre about a mile inland, and nearly opposite Ange Gardien.

*Tide Table.
River Saguenay to Quebec.*

(104.) TABLE SHEWING THE HEIGHT OF THE TIDE AT EVERY HOUR AFTER LOW AND HIGH WATER IN ORDINARY SPRING TIDES.

Place Where.	Flood Tide.		Ebb Tide.		Remarks.
	Hours after low water.	Height in feet and inches.	Hours after high water.	Height in feet and inches.	
Quebec.	<i>h. m.</i>	<i>ft. in.</i>	<i>h. m.</i>	<i>ft. in.</i>	The tides of Grosse Island were observed to rise and fall nearly in the same manner, excepting that the rise after low water was not quite so rapid.
	0 0	0 0 L.W.	0 0	17 6 H.W.	
	1 0	5 6	1 0	15 0	
	2 0	10 6	2 0	11 4	
	3 0	14 9	3 0	8 0	
	4 0	16 3	4 0	5 10	
	4 45	17 6 H.W.	5 0	3 4	
			6 0	1 6	
St. Roques.	0 0	0 0 L.W.	0 0	17 0 H.W.	
	1 0	2 6	1 0	14 9	
	2 0	5 3	2 0	11 9	
	3 0	9 6	3 0	8 6	
	4 0	13 6	4 0	5 6	
	5 0	16 3	5 0	3 0	
	5 35	17 0 H.W.	6 0	1 6	
			6 50	0 0 L.W.	
The Brandy Pots.	0 0	0 0 L.W.	0 0	17 0 H.W.	
	1 0	1 3	1 0	15 0	
	2 0	4 7	2 0	12 0	
	3 0	9 5	3 0	8 6	
	4 0	13 8	4 0	5 6	
	5 0	16 0	5 0	3 0	
	5 50	17 0 H.W.	6 0	1 0	
			6 34	0 0 L.W.	
Tadoussac. Entrance of the Saguenay River.	0 0	0 0 L.W.	0 0	17 0 H.W.	
	1 0	1 3	1 0	15 0	
	2 0	4 6	2 0	12 0	
	3 0	8 0	3 0	8 0	
	4 0	12 0	4 0	4 0	
	5 0	15 6	5 0	1 0	
	6 8	17 0 H.W.	6 16	0 0 L.W.	

The above table has been formed from the mean of the observations of several spring tides. The neap tides rise and fall nearly at the same rate as in ordinary spring tides. So nearly that any difference that there may be is far exceeded by the action of strong winds. But, as in neap tides, the whole rise and fall is not so great as in the ordinary spring tides shown in the foregoing table, therefore the proportionate part of the rise and fall for every hour after low and high water will also be less, and an allowance must be made accordingly. (See the Rise in Spring and Neap Tides given in the Plans.)

The use of the table will appear evident from a consideration of *Tide Table. River Saguenay to Quebec.* what I have said at the close of the last chapter (Art. 93), but to render it still plainer we will suppose a case. A ship of the line, bound up the river, and drawing 23 feet water, weighs from off the St. Anne buoy just as the stream of flood begins to make : and judges from an estimation of her rate of sailing, in addition to that of the stream of flood, that she will be up to the Channel Patch in $1\frac{1}{2}$ hours, and at Beaujeu Bank in 3 hours. Will she have water enough to pass over the Channel Patch, and afterwards to the southward of Beaujeu Bank, and how much at each place? On reference to the table at the end of this book, it appears that the stream of ebb at St. Roque runs down $1\frac{1}{2}$ hours after low water by the shore, but that it is not low water until about a quarter of an hour later at the Pillars. The flood had therefore been rising about one hour there when the ship weighed. The tide will therefore have been rising $2\frac{1}{2}$ hours when she arrives at the Channel Patch, which may be considered the same as the Pillars. Referring to the foregoing table, we find that the rise from low water answering to $2\frac{1}{2}$ hours is about 1 fathom, which being added to 3 fathoms, the depth (shown on the plan) over the Channel Patch at low water, gives 4 fathoms as the depth over it at the time when the ship is expected to pass, which is only one foot to spare.

Again, it is not low water at Crane Island, near Beaujeu Bank, until 40m. say three quarters of an hour later than at St. Roque : the tide had therefore only risen half an hour at Beaujeu Bank when the ship weighed : which being added to 3 hours, the time she expects to be going there, will give $3\frac{1}{2}$ hours flood at the time of her arrival. Now, for $3\frac{1}{2}$ hours after low water the table gives about 2 fathoms rise, there will therefore be 5 fathoms to the southward of Beaujeu's Bank at $3\frac{1}{2}$ hours flood in ordinary spring tides, to which the table is adapted, and consequently water enough for the largest ships.

The following remarks apply particularly to Quebec. The *Tides at Quebec.* ordinary spring tides at Quebec, when unaffected by winds, rise 17 or 18 feet; and the neap tides 13 feet. The highest tide we ever observed, during a strong N.E. gale, rose 21 feet above the ordinary low water mark in spring tides. The greatest difference of level observed, from the lowest fall to the highest rise, was 24 feet. The lowest neap tide observed rose only 10 feet from the

*Tides at
Quebec.*

preceding low-water mark; that is about 12 feet above the low water mark in ordinary spring tides. In the spring, at the melting of the accumulated snow of winter, when the river is generally full of water and easterly winds prevail, the tides do not fall so low by 2 or 3 feet as at other times; or rather there are 2 or 3 feet more of water in the river when the tide is out. On the contrary in the dry season, as in August, when the supply of water from the rivers and lakes is much diminished, and westerly winds prevail, the river is much lower than at other times. The low water mark is then at a lower level by about 2 feet, and on rare occasions even 3 feet, below the low water mark in ordinary spring tides.

*Diurnal inequality of
Tides.*

It is generally thought at Quebec that the morning spring tides rise higher than the evening tides, by about three feet, in the month of May; and that in the month of October the contrary takes place; and our observations, as far as they go, would seem to establish the truth of the popular belief, for we have found it correct in the spring tides which follow the full as well as the change of the moon, and whether the moon had north or south declination. But it would require better and longer continued observations than we have been able as yet to obtain, to justify me in speaking positively respecting this "diurnal inequality" of the tides in the St. Lawrence; therefore until additional observations shall enable me to speak with certainty, I leave the above as a general remark of considerable practical importance when a vessel has to be hove off a shoal, to be launched, or to pass over any shallow part of the river. For this much is certain, that in every part of the river and gulf which we have visited, there is a considerable difference in the rise and fall of the spring tides of the same day, unless it may be when the moon is on the equator, when it is believed to disappear, as it ought to do, if the varying declination of the moon be its cause.

CHAPTER XII.

THE RIVER SAGUENAY—AND THE ST. LAWRENCE ABOVE QUEBEC.

105. River Saguenay. General Description and Remarks.—106. The Entrance of the Saguenay. St. Catherine Bay. Tadousac. Directions for entering the Saguenay.—107. Anchorages in Barque Cove, St. Etienne, St. Louis Isle, St. Barthelemi Isle, St. Jean Bay, Eternité Cove, Descente des Femmes Cove, Ah-ah Bay, Petites Iles, and below Point Roches, Chicoutimi, and concluding Remarks.—108. The River St. Lawrence from Quebec to Montreal.

105. THE River Saguenay was very imperfectly known, in a *River Saguenay, little known till lately.* nautical point of view, before our survey of it in 1829. In the preceding year, 1828, Commissioners had been appointed to explore it by the Colonial Government, and one of the results of their labours and ours was to dissipate all those extravagant exaggerations respecting the rapidity of its currents, its whirlpools, and its unfathomable depths, which had found their way into the few publications where any account of this river could be found. There was, however, little need of exaggeration, for the Saguenay really is a very remarkable and extraordinary river; if that indeed can with strict propriety be called a river which more nearly resembles a long and narrow mountain loch, for the first 50 miles up from its confluence with the St. Lawrence. In that distance the Saguenay is from two-thirds of a mile to 2 miles wide, filling up a deep transverse valley through mountains of sienitic granite and gniess. These mountains rise everywhere more or less abruptly from the water, forming, in some parts, precipitous headlands more than 1000 feet in height, and these, when seen one beyond the other up magnificent reaches of many miles in length, give rise to scenery which, although wild and barren, is yet full of grandeur and beauty.

Within the same part of the Saguenay the water is almost as *Extraordinary depth.* deep as the mountains are high. Between the shoals at the entrance of the river there is a bar across, on which, however, there is from 18 to 20 fathoms of water, but immediately within that the depth increases to upwards of 100 fathoms; and further

Extraordinary up, for a distance of many miles, it is fully 145 fathoms deep in the centre of the channel, decreasing to 100 fathoms on either side, often within less than as many feet of the precipitous shores. It is this enormous depth, its mountainous shores, and its impetuous stream, that have rendered the Saguenay so celebrated, and that entitle it to be classed among the most remarkable features in the geography of the Canadas. The bed of the Saguenay, for many miles, is sunk more than 100 fathoms below that of the St. Lawrence at their point of junction; so that if the waters were to fall sufficiently to lay dry the bed of the latter river, there would still remain a depth of more than 100 fathoms in the Saguenay. There are anchorages occasionally, as will be hereafter mentioned, but they are some miles apart, and there is none of course in the great depths between them. In the case of a vessel becalmed, however, there would be little or no danger, since there are no shoals in the channel, when once within the entrance, and a boat ahead would serve to keep her clear of the shore. In some parts, perhaps, but not often, a line might be made fast to the rocks. If ever this river becomes frequented by vessels, the assistance of steamers will be required, for the flood tide is extremely weak, and of very short duration. Above St. Marguerite River it is almost imperceptible, excepting a weak stream which may be found running up close to the shores. We often, however, observed the water to be flowing up at the depth of several fathoms, whilst it was stationary or descending on the surface. The tide flows to the foot of the Rapid of Terres Rompues, about 6 miles above Chicoutimi, and about 71 miles from the St. Lawrence. The stream of the ebb tide is very strong, varying from 3 to 5 knots, according to the breadth of the river. It is strongest in the mouth of the river, where it sometimes runs at the rate of 7 knots, and sets very strongly over Lark Islet Spit and the S.W. extremity of Point Vaches. The ordinary spring tides rise 17 feet at Tadousac, 18 feet at the Petites Iles, and 12 feet at Chicoutimi. See the Table at the end of the book. The Saguenay is navigable for the largest ships to Point Roches, 57 miles from the St. Lawrence; and schooners, with the assistance of the flood tide, can ascend to Chicoutimi, 8 miles further. Just above Point Roches the river becomes suddenly very shoal, there being only $1\frac{1}{2}$ fathoms of water in its narrow and intricate channels, and among

Tides.

Terres Rompues Rapid.

Navigable 57 miles to Point Roches.

its shoals composed of large boulders. Above this shallowest part, where at low water there is a complete rapid, the depth varies from 2 to 8 fathoms, but between shoals of large stones, and the river contracts to little more than a quarter of a mile, retaining that breadth nearly to the rapids.

The Saguenay discharges the waters of Lake St. John, contributing to the St. Lawrence a quantity of water only inferior to that which is supplied by the Ottawa. *Lake St. John.*

The granitic hills of the Saguenay are in general quite barren; *Barren hills, but good valleys.* but the valleys through which the rapid tributary streams descend are filled with a deep deposit of sand and clay, and are thickly wooded. At Ah-ah Bay and at Chicoutimi there are considerable tracts of good land, as there are also around Lake St. John; so that it seems probable that this country will be settled at no very distant day, especially as the lumberers have recently begun to turn their attention in that direction. At present the only permanent inhabitants are the residents at the Hudson Bay Company's trading ports of Tadousac and Chicoutimi.

106. The river Saguenay enters the St. Lawrence opposite Red *Saguenay* and Green Islands, as will be found in Chapter X. Art. 91, *Entrance.* wherein I have described its points of entrance, namely, Lark Point and Point Vaches, the former bearing from the latter S.W. $\frac{1}{2}$ S. 2 $\frac{1}{2}$ miles. In the same article I have also mentioned Lark Islet and Lark Reef, which extends 3 miles out to the S.S.E. from Lark Point; and also the reef off Point Vaches extending 1 $\frac{1}{2}$ miles out to the S.E. I must again refer to Art. 91 for the leading marks to clear those reefs by vessels passing up and down the St. Lawrence; as well as for the anchorage, 2 to 3 miles to the eastward of Point Vaches, usually called the anchorage of Moulin Baude; and also for *Moulin Baude and Basque anchorages.* Basque Road, affording anchorage on the other or western side of the Saguenay. Both these anchorages will be of great use to the vessels now beginning to frequent the Saguenay. I must refer to the charts for the shape of the extensive reefs on either side. The channel between the outermost part of those reefs, 2 miles off shore, and which may be called the Bar, is a mile wide, and from Bar, 18 to 20 fathoms deep. At the distance of 1 $\frac{1}{2}$ miles further in, the Lark Islet Spit runs out eastward towards Point Vaches, *Lark Islet Spit.* so as to contract the channel to about 900 fathoms; and this, the narrowest part of the entrance, is 30 fathoms deep. Immediately

*Whirling
eddies.*

within the part just mentioned there is no bottom at 60 or 70 fathoms. The meeting of the spring ebb tides down the Saguenay and St. Lawrence, causes breaking and whirling eddies and ripplings, so strong as to interfere with the steerage of a vessel, unless she have a commanding breeze. These streams, opposed to a heavy easterly gale, cause an exceedingly high, cross, and breaking sea, in which no boat could live, and which is even considered dangerous to small vessels. On the flood at such times there is not more sea there than in other parts of the river.

*St. Catherine
Bay.*

On the west side of the entrance of the Saguenay, between Lark Islet and Point Noire, is *ST. CATHERINE BAY*, in which vessels may anchor, in 20 or 30 fathoms of water, out of the strength of the tides, but exposed to a considerable swell in easterly winds. On the N.W. side of this Bay we observed several large iron rings in the steep granitic shore, which were probably used for mooring or heaving down vessels, in the time of the French.

Tadoussac.

THE HARBOUR OF TADOUSSAC is on the eastern side of the entrance of the Saguenay, and a mile within Point Vaches. It is a bay between Points Rouge and Ilot, with a sandy beach at its head, and rather more than half a mile wide by a third of a mile deep. The anchorage is in from 7 to 18 fathoms, clay bottom. Vessels ought always to moor, and have a heavy anchor close in shore, for the gusts from the N.W. are at times exceedingly powerful, and should the anchor start, there would be little chance of bringing up again before the vessel had dragged her anchor down hill into deep water. Besides, although vessels are here completely out of the regular streams of the tides, yet eddies often set into the bay, causing a vessel to swing round several times in a tide, so that it would be almost impossible to keep a clear anchor.

The shelter is rendered complete in every direction by either land or reefs, excepting for one point between S.E. by S. and S.S.E., and there Red Islet, with the south coast beyond it at no great distance, prevent any sea, of consequence even to a boat, from ever entering the harbour.

*Hudson Bay
Company's
Trading Posts.*

The Hudson Bay Company's Trading Post, consisting of a good dwelling-house, stores, and a small chapel for the Indians, is situated on a semi-circular terrace of sand and clay, at the head of the bay, and backed by steep, high, and rugged hills of granite. It has a small portion of land around it fit for cultivation.

It is the principal of those posts for trading with the Indians which are known by the name of the "King's Posts," and are at present leased to the Hudson Bay Company. The French explored the Saguenay before the middle of the sixteenth century, and Tadousac soon after became, and remained till the settlement of Canada, their principal post in the St. Lawrence for carrying on the fur trade with the Indians. The Saguenay is 700 fathoms wide from Point Ilot, the N.W. point of the Harbour of Tadousac, across to Point Noire.

DIRECTIONS FOR ENTERING THE SAGUENAY.

Three buoys would be required to enable vessels to beat into the Saguenay. One on the outer reef of Point Vaches; another opposite to it, on the N.E. point of the Bar Reef; and the third on the same side of the channel, on the extremity of Lark Islet Spit. These buoys are requisite because there is no leading mark for the reefs on the S.W. side of the entrance. On the N.E. or Point Vaches side observe that the Points Ilot and Laboule in one, bearing N.W. by W. $\frac{1}{2}$ W. just clear the S.W. side of Point Vaches Reef; Point Ilot being the rather low N.W. point of the Harbour of Tadousac, and Laboule, a high and round-backed hill, forming a steep headland, 4 miles above Tadousac, and the extreme point seen on the same side of the river.

Winds from S.W. round by south to N.E. will enable vessels to enter the Saguenay on the flood-tide. The first, which is the prevailing summer wind, will not carry a vessel far up, since she will be becalmed under the mountainous shores; but the N.E., or wind up the St. Lawrence, draws also up the Saguenay, and is the only wind which can be depended on for running a vessel up to the anchorages above Tadousac. The N.W. wind often blows down the river in furious squalls, especially in the fall of the year. Being bound to the Saguenay, approach the entrance early on the flood, with a breeze on which you can depend, and plenty of daylight to reach the anchorage of Tadousac. Remember that the ebb sets like a rapid over Lark Island Spit and Point Vaches Reef, and that it is dangerous to be becalmed just within either of them, because the water is so deep that it is difficult to anchor. If night be coming on, or the tide or the wind be unfavourable, anchor off Moulin Baude or in Basque Road, according to circumstances, and wait your opportunity for running

*Saguenay
Entrance.*

in, unless you have a pilot sufficiently skilful to beat in with safety.

Whether you approach the entrance from the S.W. or N.E. in either case bring the western points of the Brandy Pots and White Islet in one and open to the southward of Hare Island, bearing S.S.W. $\frac{1}{2}$ W. Run upon this mark (and it will lead you well clear of the Vaches Patch and Lark Reefs) until Laboule Point comes in one with Point Ilot, bearing N.W. by W. $\frac{1}{2}$ W., as before mentioned. Haul in now for the last named leading mark, keeping the S.W. extreme of Laboule just open, and it will lead you in clear of all danger. As soon as you are as far in as Point Rouge you may haul in towards the trading post and into the harbour, choosing your berth at pleasure, but letting go your outer anchor in 16 fathoms, and your inner one close to the low-water mark; or you may lay it and secure it within the low-water mark, if you should prefer that as the safer plan.

ANCHORAGES IN THE SAGUENAY.

Barque Cove.

107. BARQUE COVE, rather more than a mile above Tadousac, and on the same side of the river, 200 fathoms deep, in which a vessel or two might be moored.

*St. Etienne
Bay and River.*

ST. ETIENNE BAY AND RIVER are $10\frac{1}{2}$ miles up the Saguenay, and on its S.W. shore. This Bay is a mile wide, and forms a harbour where a number of vessels may ride, in from 10 to 30 fathoms clay bottom, along the edge of the bank which dries out a third of a mile from the shore.

St. Louis Isle.

ST. LOUIS ISLE, 17 miles up the river, forms an excellent anchorage, either under its east end or between it and the south shore; the depth of water being from 10 to 30 fathoms, sand and mud bottom.

*St. Barthelemi
Isle.*

ST. BARTHELEMI ISLE, a mile higher up, and on the opposite side of the river, lies close to the mouth of the River Cacard. A vessel or two might be secured there; the place being small, and the depth of water from 6 to 20 fathoms.

St. Jean Bay.

ST. JEAN, on the southern shore, and 24 miles up the Saguenay, is a large bay with a small islet off its N.W. point. It is $1\frac{1}{2}$ miles wide and $1\frac{1}{2}$ miles deep. The river St. Jean and several small streams enter at its head. Off these streams, and along the edge of the bank which dries out a quarter of a mile from

the shore, there is good anchorage for many vessels, in from 9 to 40 fathoms mud bottom.

ETERNITÉ, on the same side as St. Jean, and 6 miles higher *Eternité Cove.* up the river, is a large cove, half a mile wide and $1\frac{1}{2}$ miles deep, with a river of the same name at its head. At the head of this Cove vessels may lie securely, in from 8 to 30 fathoms, mud bottom, and as perfectly land-locked as if they were in a small lake surrounded with mountains.

DESCENTE DES FEMMES is a cove, 350 fathoms long, with *Descente des Femmes Cove.* a depth of 20 fathoms in its entrance, decreasing to 5 fathoms near its head. Several vessels might be moored in it in perfect security. It is 42 miles up the river, and on its northern shore. Five miles above this Cove the Saguenay turns suddenly to the northward, between Cape East and Cape West, but the previous direction of the river is continued 6 or 7 miles beyond the point last named to the head of Ah-ah Bay, 55 miles from the entrance of the river. *Capes East and West.*

AH-AH BAY is 6 miles deep and from $1\frac{1}{2}$ to $2\frac{1}{2}$ miles wide, the *Ah-ah Bay.* widest part being at its head where four considerable streams fall into it. The best anchorage is on either side of a small islet joined to the shore at low water in the S.W. corner of the bay, and from 7 out to 30 fathoms clay bottom. There is room for any number of vessels, but they are rather exposed in easterly winds.

THE PETITES ILES on the northern shore of the river, 52 miles *Petites Iles.* from its entrance, and $4\frac{1}{2}$ above Cape East, are three small rocky islets joined to the shore at low water. The bay on the east side of them forms a small but secure anchorage. The depth of the water is from 6 to 17 fathoms mud bottom. The Saguenay, which is here nearly 2 miles wide and 65 fathoms deep, is contracted to three quarters of a mile, by a high rocky point projecting from its northern shore, at the distance of two miles to the westward; but expands again nearly to the same breadth in the next 3 miles, which is the distance from the high point just mentioned to Point Roches. On the north side of the river, from the high point to within a mile of Point Roches, there is very good anchorage in any depth out to 20 fathoms.

POINT ROCHES is 57 miles from the entrance of the river, *Roches Point.* and here the navigation ends for shipping, but continues for schooners to Chicoutimi, 8 miles further, as I have mentioned in

art. 105. The Saguenay is still $1\frac{1}{2}$ miles wide at Point Roches, but contracts rapidly above it, assuming at the same time the usual characters of a river, such as mud-banks on either side dry at low water, shoals of large boulder stones, drift trees, &c. The water also becomes fresh when the tide is out.

Chicoutimi.

CHICOUTIMI RIVER AND TRADING POST are on the south side of the Saguenay, and 65 miles from its entrance. This river is the largest tributary to the Saguenay. It falls 40 or 50 feet, through a narrow, rocky, and rugged channel, only a short distance within its entrance.

The trading Post of Chicoutimi, is one of the King's Posts, and leased to the H. B. Company. It stands on the west side of the river Chicoutimi at its confluence with the Saguenay, and consists of a good dwelling-house, store, barn, and inferior buildings. There is also here a small church or chapel, erected by the Jesuit missionaries in the early part of the last century, still kept in repair by the Indians, and visited once or twice in a year by a missionary from Quebec. Several of the early Jesuit missionaries were buried in this chapel, and their tombstones may yet be seen. There is here a considerable space fit for cultivation. Potatoes and garden vegetables are raised for the use of the people of the establishment.

*Rapids between
Chicoutimi and
Lake St. John.*

From Lake St. John to within 5 or 6 miles of this Post, a distance of 10 or 11 leagues, the Saguenay is said to be so full of heavy rapids as to be exceedingly dangerous to canoes, therefore the longer and more circuitous route up the Chicoutimi, through Lake Kiguagomi, and down the river Metabetschuan is preferred. At the mouth of this last-named river on the south of Lake St. John stands another of the King's Posts, leased by the H. B. Company. It was established first by the Jesuit missionaries in the 16th century, and traces of their cultivation still remain.

No directions are necessary for ascending the Saguenay to the anchorages which I have just mentioned, since there is not a single rock or shoal in the way from Tadousac to the anchorage below Point Roches.

The times of high water on the full and change days of the moon, the rise of the tides, the latitude, longitude, and variation, will be seen on the Admiralty Charts, and in the Table at the end of this book.

THE RIVER ST. LAWRENCE,

FROM QUEBEC TO MONTREAL.

108. Just above the entrance of the river Chaudiere, (which is *Sault Pass* on the southern shore, and 5 or 6 miles above Quebec,) the St. Lawrence is rather less than 400 fathoms wide, between steep, high, and partially-wooded banks, composed of greywackè and slate rocks, and of great beauty. The channel of the river is still further reduced at low water by rocky shoals, which dry out from the shore on either side. The breadth of the stream is then only 280 fathoms, but the depth is nearly 30 fathoms, and the rate of the stream of ebb about 6 knots. This narrow pass is called the Sault; and it is here that the drift-ice packs and forms an ice-bridge over which a sleigh road is formed almost every winter.

At Cape Carouge, on the northern shore, and about 8 miles above Quebec, there is an excellent anchorage; and the river there begins to expand into a magnificent reach, from 2 to 2½ miles wide, which extends to the westward as far as the eye can reach. The high and steep banks on either side forming occasionally precipitous headlands, are suited to the grandeur of the stream; while the fields and houses of the peasantry, and the villages, 6 or 7 miles apart, with their stone churches and tinned steeples, often situated on the projecting points and headlands, form altogether scenery of very considerable beauty.

The navigation is devoid of all difficulty as far as the dangerous shoals of Point Trembles, on the northern shore, and 18 or 19 miles above Quebec. Those shoals extend westward for many miles up the river, leaving a channel between them and the southern shore, in some places only 400 fathoms wide. Still there are no difficulties in the navigation that may not be easily overcome, even in the largest ships, as high as Port Neuf, which is on the northern shore, and 32 miles above Quebec.

The first great difficulty in the navigation is the *Richelieu Rapid*, which commences just above Port Neuf, and extends nearly to Grondine, 41 miles above Quebec. In the narrowest part of the Richelieu the channel at low water is between extensive shoals of immense boulder stones, and only 230 fathoms wide. There is water enough for any vessel, but there is only

*Richelieu
Rapid.*

about an hour of very weak stream of flood, while the ebb runs in spring tides at the rate of fully 7 knots. This is therefore a difficult and dangerous pass which, before there were steam tow-boats on the St. Lawrence, used often to cause great delay to vessels in those seasons when westerly winds prevail. The steamers regulate the time of their departure from Quebec so as to arrive at the foot of the Richelieu with the flood tide, and they are assisted by a small light on an islet on the southern side of the channel, and also by two other lights on the high land to the eastward of the former, and which lead through the upper part of the channel.

*Port Neuf
Tides.*

At Port Neuf the spring tides rise 14 feet, while at Grondine they only rise 9 feet; there is therefore a great difference in the rise of the tides at the foot and head of the Richelieu, namely, 5 feet in 9 miles, so that it seems that the descent in the bed of the St. Lawrence is there very considerable. The navigation above the Richelieu continues more or less difficult, and is so embarrassed by shoals of large boulders that at Point Livreur (opposite the River St. Anne, and 47 or 48 miles above Quebec), the ship channel is reduced to the breadth of 180 fathoms.

*Champlain and
Gentilly Vil-
lages.*

The villages of Champlain and Gentilly are opposite to each other, and 58 miles from Quebec, the former being on the northern and the latter on the southern shore. They may be said to mark the extent of the stream of flood tide, which was not observed by us above the shoals of Gentilly, where the ordinary spring tides, unless assisted by an easterly gale, do not rise above 2 or 3 feet. Here also a considerable change takes place in the character of the country, for the high banks, which had continued to form the southern shore of the river all the way from opposite Quebec, turn back into the country, and the shores on both sides become low and of an alluvial appearance.

*Flood stream
ceases.**Three Rivers
Tides.*

At the town of THREE RIVERS, 68 miles above Quebec, the ordinary spring tides rise one foot, and it is high water on the full and change days at 11½ hours. In the spring and fall easterly gales often occur with the spring tides, and cause them to rise, it is said, for we did not observe it, a foot or two higher.

*Point Lac
Tides.*

At Point Lac, at the lower entrance of Lake St. Peter, and 75 miles from Quebec, the neap tides are almost imperceptible, and the spring tides, unless assisted by an easterly gale, do not rise above 3 or 4 inches. The effect of the tides may be said to

be lost in Lake St. Peter, since no alternate rise and fall of the *Lake St. Peter.* water, that could be attributed to their influence, was observed by us among the islands at its head. It would be possible to take the largest vessels to the lower entrance of Lake St. Peter, since 4 fathoms could be carried up by buoying the channel.

The distance up the Lake from Point Lac to the Islands is about 18 miles, of which about 4 miles are over a flat of sand and clay, on which there is not more than 11 or 12 feet in the ordinary state of the waters in the summer months. In the spring, after the melting of the winter's snows, and in the fall after the heavy rains, there is generally 2 or 3 feet more water, while in summer the depth is sometimes reduced to 10 feet. It is even said to have been reduced as low as 9 feet in some extraordinarily dry seasons. It is in contemplation to attempt immediately the deepening of the channel through Lake St. Peter, by means of a steam dredging machine; but in the mean time the depth which can be carried through the Lake in the ordinary state of the waters is 11 or 12 feet. At the western *Light-vessel and buoy.* extremity of the flat or bar a small light-vessel and buoy are placed, to mark the entrance to the principal channel through the islands, as well as the deepest water through the Lake. Besides the flat of Lake St. Peter, there is another impediment to the navigation at *Valtrie Bar.* Valtrie Bar, about $1\frac{1}{2}$ miles below the light-house on Valtrie Island; the latter being near the northern shore, about 12 miles above Sorel, and 111 from Quebec. The depth of water over that bar is about 6 inches more than over the flat of Lake St. Peter. The bar is of no great extent, but is composed of very stiff and tenaceous clay, with many embedded boulders, and would probably, therefore, be difficult to remove. If these barriers could be removed, vessels drawing 18 or 19 feet might ascend the St. Lawrence to Montreal. The channel above Lake St. Peter is often narrow, and difficult for sailing vessels, and the current, the average rate of which does not exceed 2 or 3 knots, is in some narrow places of considerably greater strength. At the Rapid of St. Mary, just below the city of Montreal, the *Rapid of St. Mary.* rate of the current amounts to 7 knots, and used formerly to detain vessels many days waiting for a fair and strong wind to ascend; but the steamers now overcome all such difficulties, reducing the passage up from Quebec, which not unusually occupied weeks, to a certain duration of a few hours.

*Montreal
Harbour.*

The Harbour of Montreal has water enough for vessels as large as are ever likely to pass Lake St. Peter, and the distance to it from Quebec is 138 nautical or 160 statute miles. Immediately above Montreal the navigation for shipping is closed by the commencement of the Rapid of St. Louis.

*Sailing Direc-
tions useless
above Quebec.*

In the long line of river navigation which has been briefly described, written directions would be in most parts totally unavailing, and in all cases could only give very imperfectly the same information which is so clearly and graphically given in the plans of the river. These plans will be of great use in pointing out possible improvements in the navigation, in the selection of the best route to be pursued by vessels, and in buoying and lighting the channels to the best advantage. In some parts, as at the Vercheres Islands and Bague Isle, where there is a light-house, the river is divided into several channels; yet one route alone is pursued to the neglect of the others, which thus become unknown, although it would be easy to show how important a knowledge of them all might prove under circumstances of common occurrence.

*Bague Isle
Light.*

*Portable
Light-houses.*

*Packed ice
often swells
into a dam.*

The light-houses at Bague Isle, Valtrie, and on the Islet in the Richelieu Rapid, are small and portable, so that they may be removed on the approach of winter, and thus escape being carried away by the ice; for in spring those low islets are overflowed, and the ice, moreover, in moving down the river, often packs, forming a "digue," or dam, behind which the waters rise many feet, until their pressure overcomes and bursts through the impediment with such force that not only buildings would give way before it, but even many trees are often prostrated in the low grounds, and great banks of rolled stones are forced up by the ice on the upper ends of islands which are exposed to the current. Great damage is sometimes done at Montreal from the ice taking the ground and damming back the water so as to overflow the wharfs and storehouses in the lower parts of the city, and thus exposing them to the pressure of the drift ice. Hence it is that vessels cannot winter at Montreal, and that the steamers are sent either to Sorel, at the entrance of the river Richelieu, or to the Boucherville Islands, those being the only places where they or other large vessels can be safe from the ice, although there are many places where Durham boats and other small river craft may be secured. There is no doubt but that large stones are moved by the ice, and

*Vessels winter
at Sorel or
Boucherville
Islands.*

that the depth of water over shoals will vary in consequence ; *Depth on the Shoals varies.*
but from all I can learn there has been no material change in the main channels of the river for many years. The islands and flats of Lake St. Peter are doubtless extending to the eastward or down the Lake, but without as yet affecting the depth of water in the channel.

Besides the lights which I have mentioned, the navigation is *Pilots' buoys and marks.*
assisted by rough buoys, formed of logs and attached spruce bushes, placed in the most difficult parts of the channel. The numerous leading marks used by the pilots are seldom permanent, or of a nature to admit of such a description as would enable a stranger to distinguish them from many other similar objects in their vicinity. They consist almost always of trees and houses, which can be easily and certainly recognised only by those who have become familiar with every object, and whose local knowledge prevents them from being misled, even although the trees be blown down, or the houses change their colour and appearance at the fancy of the owners, as occasionally occurs. These circumstances confirm what I have before asserted as to the inutility of written directions for the navigation of the St. Lawrence, between Quebec and Montreal. But it is a rare thing now *Large vessels now towed up by steamers.*
to see large vessels sailing in the St. Lawrence above Quebec, especially on the upward passage. The powerful steamers frequently tow several large ships at once, and the commerce between the two cities is never likely in future to be carried on without such assistance, so that the seaman will have little to do with the navigation of his vessel above Quebec.

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